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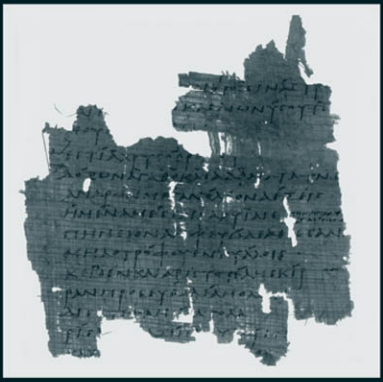
ANCIENT GREEK ACCENTUATION

SYNCHRONIC PATTERNS, FREQUENCY EFFECTS, AND PREHISTORY



Philomen Probert

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Synchronic Patterns, Frequency Effects, and Prehistory

PHILOMEN PROBERT

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At the end of such a catalogue of indebtedness it is gratifying to recall that the blunders in this book, at least, are entirely my own work.

P.P.

Wolfson College, Oxford
September 2004

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Abbreviations

Ancient Authors and Works, with Editions Used

Names of the works of ancient authors are abbreviated as in H. G. Liddell, R. Scott, H. S. Jones, R. McKenzie, P. G. W. Glare, and A. A. Thompson, *A Greek–English Lexicon*, 9th edn. with revised supplement (Oxford: Clarendon Press, 1996) (LSJ). Spurious works and works of uncertain authorship appear under the name of the author to whom they are traditionally attributed. Thus, 'Aeschylus' includes the *Prometheus Bound*; 'Hippocrates' includes the Hippocratic Corpus; 'Hesiod' includes the Hesiodic Corpus; 'Theognis' includes Theognidea, and so on. Series are indicated as follows: (B) = Collection des universités de France publiée sous la patronage de l'association Guillaume Budé; (CMG) = Corpus Medicorum Graecorum; (GG) = Grammatici Graeci; (L) = Loeb Classical Library; (OCT) = Scriptorum classicorum bibliotheca oxoniensis; (T) = Bibliotheca Scriptorum Graecorum et Romanorum Teubneriana. Approximate dates are given for those authors who are included because they are cited in the Appendices as sources of words forming the data studied in Part II.

Achaeus	*TrGF* (q.v.): i. 115–28. (5th cent. BC)
Ael. Aristid.	Aelius Aristides: F. W. Lenz, C. A. Behr and B. Keil; vol. i, ed. Lenz and Behr (Leiden 1976); vol. ii, ed. Keil (Berlin 1898)
Aelian	Claudius Aelianus: R. Hercher (T) 1864 for *NA*; M. R. Dilts (T) 1974 for *VH*
Aeschylus	M. L. West (T) 1998 for complete plays; *TrGF* (q.v.), vol. iii for frr. (6th–5th cent. BC). MS Laurentianus 32. 9 ('M'), 10th cent. AD, consulted in facsimile: E. Rostagno, *L'Eschilo laurenziano, facsimile* (Florence 1896)
Aetius	A. Olivieri (CMG) 1935–50
Alcaeus	E.-M. Voigt, *Sappho et Alcaeus: Fragmenta* (Amsterdam 1971). (7th–6th cent. BC)
Alcman	*PMGF* (q.v.): 5–132. (7th cent. BC)
Alexis	*PCG* (q.v.): ii. 21–195. (4th–3rd cent. BC)
Ammonius	K. Nickau (T) 1966
An. Ox.	J. A. Cramer, *Anecdota Graeca e codd. manuscriptis bibliothecarum oxoniensium* (Oxford 1835–7)

Anacreon	*PMG* (q.v.): 171–235. (6th cent. BC)
Anaxandrides	*PCG* (q.v.): ii. 236–78. (4th cent. BC)
Anaxilas	*PCG* (q.v.): ii. 279–98. (4th cent. BC)
Antiatt.	*Antiatticista*, *BA* (q.v.): i. 75–116
Antimachus	B. Wyss (Berlin 1936). (5th–4th cent. BC)
Antiphanes	*PCG* (q.v.): ii. 312–481. (4th cent. BC)
Apollonius Dyscolus	R. Schneider and G. Uhlig (GG) 1878–1910. (2nd cent. AD)
Apollonius Rhodius	H. Fränkel (OCT) 1961. (3rd cent. BC)
Append. prov.	*Appendix proverbiorum bodleiana, vaticana, coisliniana*, in E. L. von Leutsch and F. G. Schneidewin, *Corpus paroemiographorum Graecorum*, vol. i (Göttingen 1839): 379–467
Aratus	J. Martin (B) 1998. (4th–3rd cent. BC)
Arc.	M. Schmidt, *Arcadii Ἐπιτομὴ τῆς καθολικῆς προσῳδίας Ἡρωδιανοῦ* (Jena 1860)
Archilochus	*IEG* (q.v.): i. 1–108. (7th cent. BC)
Aretaeus	K. Hude (CMG) 1958. (2nd cent. AD)
Aristophanes	V. Coulon (B) 1995–2002 for *Ach.*, *Eq.*, *Pl.*, *Th.*, *V.*; N. Dunbar (Oxford 1995) for *Av.*; J. Henderson (Oxford 1987) for *Lys.*; K. J. Dover (Oxford 1968) for *Nu.*; S. D. Olson (Oxford 1998) for *Pax*; K. J. Dover (Oxford 1993) for *Ra.*; *PCG* (q.v.), vol. iii.2 for frr. (5th–4th cent. BC). MS Ravennas 137, 4, A, 10th or 11th cent. AD, consulted in facsimile: J. van Leeuwen, *Aristophanis comoediae undecim cum scholiis*: *codex Ravennas* 137, 4, A *phototypice editus* (Leiden 1904)
Aristophanes of Byzantium	W. J. Slater (Berlin–New York 1986)
Aristotle	P. Moraux (B) 1965 for *Cael.*; F. Susemihl and O. Apelt (T) 1912 for *EN*; P. Louis (B) 1964–9 for *HA*; W. L. Lorimer (B) 1933 for *Mu.*; P. Louis (B) 1993 for *PA*; R. Kassel (OCT) 1965 for *Po.*; W. D. Ross (OCT) 1957 for *Pol.*; P. Louis (B) 1991–4 for *Pr.*; R. Kassel (Berlin–New York 1976) for *Rh.*; W. D. Ross (OCT) 1984 for *SE*; V. Rose (T) 1886 for frr. (4th cent. BC)
Artemidorus Daldianus	R. A. Pack (T) 1963. (2nd cent. AD)
Athenaeus	G. Kaibel (T) 1887–90
BA	I. Bekker, *Anecdota Graeca* (Berlin 1814–21)

Batrachomyomachia	T. W. Allen, *Homeri Opera*, vol. v (OCT) 1912: 168–83. (Later than 4th–3rd cent. BC)
Bion	A. S. F. Gow, *Bucolici Graeci* (OCT) 1952: 153–65. (2nd cent. BC)
CAG	*Commentaria in Aristotelem Graeca* (Berlin 1882–1909)
Callimachus	R. Pfeiffer (Oxford 1949–53). (4th–3rd cent. BC)
Choer.	Choeroboscus, *An. Ox.* (q.v.): ii. 167–281 for *Orth.* = *Ὀρθογραφία*; *An. Ox.* (q.v.): ii. 283–318 for *Περὶ ποσ.* = *Περὶ ποσότητος*; A. Hilgard (GG) 1889–94 for Th. = *Scholia in Theodosii Alexandrini canones*
Coll. Alex.	J. U. Powell, *Collectanea Alexandrina* (Oxford 1925)
Comica adespota	*PCG* (q.v.), vol. viii. (Various dates)
Corinna	*PMG* (q.v.): 325–45. (Date disputed)
Crateuas	M. Wellmann, *Pedanii Dioscuridis Anazarbei de Materia Medica libri quinque*: iii. 139–46 (Berlin 1914). (2nd–1st cent. BC)
Cratinus	*PCG* (q.v.): iv. 112–337. (5th cent. BC)
Critias	D–K (q.v.): ii. 371–99. (5th cent. BC)
Democritus	D–K (q.v.): ii. 81–230. (5th cent. BC)
Demosthenes	K. Fuhr and J. Sykutris (T) 1914–37. (4th cent. BC)
Dio Chrysostom	H. von Arnim (Berlin 1893–6). (1st–2nd cent. AD)
Diocles	*PCG* (q.v.): v. 18–24. (5th–4th cent. BC)
Diocles Medicus	M. Wellmann, *Die Fragmente der sikelischen Ärzte Akron, Philistion und des Diokles von Karystos* (Berlin 1901): 117–207. (4th–3rd cent. BC)
Diod. Sic.	Diodorus Siculus: most recent Budé text (various editors). (1st cent. BC)
Diog. Laert.	Diogenes Laertius: H. S. Long (OCT) 1964
Diog. Sinop.	Diogenes Sinopensis: *TrGF* (q.v.): i. 253–8. (4th cent. BC)
Dion. Hal., *Antiq. Rom.*	Dionysius Halicarnassensis, *Antiquitates Romanae*: C. Jacoby (T) 1885–1905. (1st cent. BC)
Dioscorides	M. Wellmann (Berlin 1906–14). (1st cent. AD. Words existing only among the *notha* printed by Wellmann are not included in my data)
D–K	H. Diels and W. Kranz, *Die Fragmente der Vorsokratiker,* 6th edn. (Berlin 1951–2)

EGF	M. Davies, *Epicorum graecorum fragmenta* (Göttingen 1988)
EM	T. Gaisford, *Etymologicum Magnum* (Oxford 1848)
Empedocles	D–K (q.v.): i. 276–375. (5th cent. BC)
Ep. Hom. alph.	Epimerismi Homerici qui ordine alphabetico traditi sunt, in A. R. Dyck, *Epimerismi Homerici*, vol. ii (Berlin–New York 1995): 1–822
Ep. Ps.	T. Gaisford, *Georgii Choerobosci epimerismi in Psalmos* (Oxford 1842)
Epicharmus	*PCG* (q.v.): i. 8–137. (6th–5th cent. BC)
Ps.-Epicharmus	*PCG* (q.v.): i. 138–73. (Various dates)
Epicrates	*PCG* (q.v.): v. 153–63. (4th cent. BC)
Epicurus	G. Arrighetti (Turin 1973). (4th–3rd cent. BC)
Erinna	H. Lloyd-Jones and P. Parsons, *Supplementum Hellenisticum* (Berlin–New York 1983): 186–93. (4th cent. BC)
Erotianus	E. Nachmanson (Gothenburg 1918). (1st cent. AD)
Et. Gen.	*Etymologicum Genuinum*. Not fully edited. Apart from the parts so far edited by Adler and Alpers and by Lasserre and Livadaras (see below), cited only at second hand, with an indication of the source
Et. Gen. . . . Adler–Alpers	*Etymologicum Genuinum*: *Littera λ*, A. Adler and K. Alpers, in K. Alpers, *Bericht über Stand und Methode der Ausgabe des Etymologicum Genuinum* (Copenhagen 1969): 25–53
Et. Gen. . . . L–L	*Etymologicum Genuinum*, F. Lasserre and N. Livadaras (Rome–Athens 1976–)
Et. Gud.	*Etymologicum Gudianum*, F. W. Sturz (Leipzig 1818)
Et. Gud. . . . Stef.	*Etymologicum Gudianum*, A. de Stefani (Leipzig 1909–20)
Euphorion	*Coll. Alex.* (q.v.): 28–58. (3rd cent. BC)
Eupolis	*PCG* (q.v.): v. 294–539. (5th cent. BC)
Euripides	J. Diggle (OCT) 1981–94 for complete plays; *TGF* (q.v.): 361–716, Suppl.: 3–20 for frr. (5th cent. BC). MS Parisinus Graecus 2713 ('B'), 10th or 11th cent. AD, consulted in facsimile: J. A. Spranger, *Euripidis quae in Cod. Par. Gr.* 2713 *servantur phototypice expressa* (Florence 1938)

Eust.	Eustathius: M. van der Valk (Leiden 1971–87) for *Iliad* commentary; G. Stallbaum (Leipzig 1825–6) for *Odyssey* commentary
Galen	C. G. Kühn (Leipzig 1821–33). (More recent editions in CMG series, where available, were also consulted.) (2nd cent. AD)
GDI	H. Collitz *et al.*, *Sammlung der griechischen Dialekt-Inschriften* (Göttingen 1883–1915)
Gorgias	D–K (q.v.): ii. 271–307. (5th–4th cent. BC)
Greek Anthology	H. Beckby (Munich 1965–8). (Various dates). MSS Palatinus 23 and Parisinus Suppl. Gr. 384 (originally a single manuscript, 'P'), 10th cent. AD with 11th-cent. AD corrections, consulted in facsimile: C. Preisendanz, *Anthologia Palatina: Codex Palatinus et Codex Parisinus phototypice editi* (Leiden 1911)
Harpocration	J. J. Keaney (Amsterdam 1991). (W. Dindorf (Oxford 1853) also consulted.) (2nd cent. AD)
Hephaestion, *Ench.*	Hephaestion, *Enchiridion*: M. Consbruch (T) 1906. (2nd cent. AD)
Heraclitus	D–K (q.v.): i. 139–90. (6th–5th cent. BC)
Hermippus	*PCG* (q.v.): v. 561–604. (5th cent. BC)
Hermogenes	H. Rabe (T) 1913
Hero	W. Schmidt *et al.* (T) 1899–1914. (1st cent. AD)
Herodas	I. C. Cunningham (T) 1987. (Not used for accents; the main papyrus text has few accents)
Herodotus	K. Hude (OCT) 1927. (5th cent. BC)
Hesiod	F. Solmsen, R. Merkelbach, and M. L. West (OCT) 1990. (*c.*700 BC)
Hesychius . . . Latte	K. Latte (Copenhagen 1953–66)
Hesychius . . . Schmidt	M. Schmidt (Jena 1858–68)
Hippocrates	R. Joly (B) 1972 for *Acut.*, *Liqu.*; J. Jouanna (B) 1996 for *Aër.*; R. Joly (B) 1978 for *Loc. hom.*; J. Jouanna (B) 1983 for *Morb.* 2; R. Joly (B) 1970 for *Morb.* 4, *Nat. puer.*; J. Jouanna and M. D. Grmek (B) 2003 for *Epid.* 7; J. Jouanna (B) 1990 for *VM*; H. Kuehlewein (T) 1902 for *Fract.*; É. Littré (Paris 1839–61) for *Epid.* 1, 4, *Mul.* 1; W. D. Smith, *Hippocrates, Pseudepigraphic Writings* (Leiden–New York–Copenhagen–Cologne 1990): 48–107 for *Ep.* (5th–4th cent. BC+)
Hom.	Homer. See *Il.* and *Od.*

Homeric Hymns	T. W. Allen, *Homeri opera*, vol. v (OCT) 1912: 1–92. (After 8th cent. BC)
Hrd.	Herodianus Grammaticus: A. Lentz (CG) 1867–70 for *διχρ.* = *περὶ διχρόνων* and *μον.* = *Περὶ μονήρους λέξεως*; Hunger 1967 (see References) for frr. . . . Hunger; J. F. Boissonade, *Ἡρωδιανοῦ ἐπιμερισμοί. Herodiani partitiones e codd. Parisinis* (London 1819) for *Part.* = *Ἐπιμερισμοί*. (2nd cent. AD; the *Part.* are spurious and later)
IEG	M. L. West, *Iambi et elegi graeci ante Alexandrum cantati*, 2nd edn. (Oxford 1989–92)
IG	*Inscriptiones Graecae* (Berlin 1873–)
Il.	*Iliad*: M. L. West (T) 1998–2000. (*c.*8th cent. BC). MS Venetus Marcianus 822 (formerly 454; 'A'), 10th cent. AD, consulted in facsimile: D. P. A. Comparetti, *Homeri Ilias cum scholiis: codex Venetus A, Marcianus 454, phototypice editus* (Leiden 1901)
Io. Al.	W. Dindorf, *Ἰωάννου Ἀλεξανδρέως Τονικὰ παραγγέλματα* (Leipzig 1825)
Io. Phil. *Diff.*	L. W. Daly, *Iohannis Philoponi De vocabulis quae diversum significatum exhibent secundum differentiam accentus* (Philadelphia 1983)
Ion	*TrGF* (q.v.): i. 95–114. (5th cent. BC)
Isocrates	G. Mathieu and É. Brémond (B) 1928–62. (4th cent. BC)
Josephus	B. Niese (Berlin 1885–95). (1st cent. AD)
Lex. rhet. Bekk.	*Λέξεις ῥητορικαί*, *BA* (q.v.): i. 195–318
Lucian	M. D. Macleod (OCT) 1972–87. (2nd cent. AD)
Lycophron, *Al.*	L. Mascialino, *Lycophronis Alexandra* (T) 1964. (4th–3rd cent. BC)
Lyrica adespota fr. . . . Page	*PMG* (q.v.): 483–551. (Various dates)
Lyrica adespota fr. . . . Powell	*Coll. Alex.* (q.v.): 177–201. (Various dates)
Manetho Astrologus	A. Koechly, *Manethonis apotelesmaticorum qui feruntur libri* VI (T) 1858. (2nd cent. AD)
Menander	S. Jaekel, *Menandri Sententiae* (T) 1964 for *Mon.*; *PCG* (q.v.), vol. vi.2 for frr. (4th–3rd cent. BC)
Mimnermus	*IEG* (q.v.): ii. 83–92. (7th cent. BC)
Moschus	A. S. F. Gow, *Bucolici Graeci* (OCT) 1952: 132–52. (2nd cent. BC)

New Testament	E. Nestle and G. D. Kilpatrick (London 1958). (1st–2nd cent. AD)
Nicander	J.-M. Jacques (B) 2002– for *Ther.*; A. S. F. Gow and A. F. Scholfield (Cambridge 1953), for *Alex.* and frr. (3rd–2nd cent. BC)
Nonnus	F. Vian *et al.* (B) 1976–
Od.	*Odyssey*: P. von der Muehll (T) 1962. (*c.*8th cent. BC)
Olympiodorus	A. Busse, *Olympiodori prolegomena et in Categorias commentarium* (Berlin 1902), 26–148
Oppian	F. Fajen, *Oppianus: Halieutica* (Stuttgart–Leipzig 1999). (2nd cent. AD)
Oracle . . . Cougny	E. Cougny (ed.), *Epigrammatum anthologia Palatina cum Planudeis et appendice nova epigrammatum veterum ex libris et marmoribus ductorum*, vol. iii (Paris 1890): 464–523. (Various dates)
Origen, *Hexapla*	F. Field (Oxford 1867–75). (2nd cent. AD)
Orion	F. W. Sturz (Leipzig 1820)
P. Ant.	C. H. Roberts, J. W. B. Barns, and H. Zilliacus, *The Antinoopolis Papyri* (London 1950–67)
P. Cair. Zen.	C. C. Edgar, *Catalogue général des antiquités égyptiennes du Musée du Caire: N^{os} 59001–59853: Zenon papyri* (Cairo 1925–40)
P. Lit. Lond.	H. J. M. Milne, *Catalogue of the Literary Papyri in the British Museum* (London 1927)
P. Oxy.	B. P. Grenfell, A. S. Hunt, *et al.*, *The Oxyrhynchus Papyri* (London 1898–)
P. Ryl.	A. S. Hunt *et al.*, *Catalogue of the Greek Papyri in the John Rylands Library, Manchester* (Manchester 1911–52)
Panyassis	*EGF* (q.v.): 113–29. (5th cent. BC)
Parthenius	J. L. Lightfoot (Oxford 1999). (1st cent. BC)
PCG	R. Kassel and A. Austin, *Poetae Comici Graeci* (Berlin–New York 1983–)
Pherecrates	*PCG* (q.v.): vii. 102–220. (5th cent. BC)
Philo Judaeus, *De posteritate Caini*	P. Wendland, *Philonis Alexandrini opera quae supersunt*, vol. ii (Berlin 1897): 1–41. (Repr. Berlin 1962)
Philodemus, *De Ira*	G. Indelli (Naples 1988). (1st cent. BC)
Photius . . . Porson	R. Porson, *Φωτίου τοῦ πατριάρχου λέξεων συναγωγή e codice Galeano* (Cambridge–London 1822)

Photius . . . Theodoridis	C. Theodoridis, *Photii Patriarchae Lexicon* (Berlin–New York 1982–).
Phryn.	Phrynichus: E. Fischer, *Die Ekloge des Phrynichos* (Berlin–New York 1974) for *Ecl.* = *Ecloge*; J. von Borries, *Phrynichi sophistae Praeparatio Sophistica* (T) 1911 for *PS*. (2nd cent. AD)
Phrynichus Comicus	*PCG* (q.v.): vii. 393–430. (5th cent. BC)
Pindar	B. Snell and H. Maehler (T) 1987–9. (6th–5th cent. BC)
Plato	S. R. Slings (OCT) 2003 for *R.*; for the other works E. A. Duke *et al.* (OCT), vol. i, 1995; J. Burnet (OCT), vols. ii–v, 1901–7. (5th–4th cent. BC)
Plato Comicus	*PCG* (q.v.): vii. 431–548. (5th–4th cent. BC)
Plutarch	Most recent Teubner text (various editors). (1st–2nd cent. AD)
PMG	D. L. Page, *Poetae melici graeci* (Oxford 1962)
PMGF	M. Davies, *Poetarum melicorum graecorum fragmenta*, vol. i (Oxford 1991)
Pollux	E. Bethe (Leipzig 1900–37). (W. Dindorf (Leipzig 1824) was also consulted.) (2nd cent. AD)
Polybius	T. Büttner-Wobst (T); vol. i, 2nd edn. (1905); vols. ii–v, 1st edn. (1889–1904). (3rd–2nd cent. BC)
PSI	Società italiana per la ricerca dei papiri greci e latini in Egitto, *Papiri Greci e Latini* (Florence 1912–79)
Ptolemy, *Phas.*	Ptolemy, *Φάσεις ἀπλανῶν ἀστέρων καὶ συναγωγὴ ἐπισημασιῶν*, J. L. Heiberg, *Claudii Ptolemaei opera quae exstant omnia*, vol. ii (T) 1907: 3–67. (2nd cent. AD)
Rhianus	*Coll. Alex.* (q.v.): 9–21. (3rd cent. BC)
Rufus	C. Daremberg and C. É. Ruelle (Paris 1879). (1st cent. AD)
Sappho	E.-M. Voigt, *Sappho et Alcaeus: Fragmenta* (Amsterdam 1971). (7th–6th cent. BC)
Sch. A. Heph.	Scholia A in Hephaestionem: M. Consbruch, *Hephaestionis Enchiridion cum commentariis veteribus* (T) 1906, 93–174
Sch. Ap. Rh.	C. Wendel, *Scholia in Apollonium Rhodium vetera* (Berlin 1935)
Sch. Ar.	Scholia in Aristophanem: W. J. W. Koster *et al.* (Groningen 1960–)

Sch. Arat.	J. Martin, *Scholia in Aratum vetera* (T) 1974
Sch. D. *Il.*	H. van Thiel, *Scholia D in Iliadem*, http://www.uni-koeln.de/phil-fak/ifa/vanthiel/scholiaD.pdf (2000)
Sch. D. Thr.	A. Hilgard, *Scholia in Dionysii Thracis Artem Grammaticam* (GG) 1901
Sch. Dem.	M. R. Dilts, *Scholia Demosthenica* (T) 1983–6
Sch. Eur.	E. Schwartz, *Scholia in Euripidem* (Berlin 1887–91)
Sch. Hsd. *Th.*	L. Di Gregorio, *Scholia vetera in Hesiodi Theogoniam* (Milan 1975)
Sch. *Il.*	H. Erbse, *Scholia graeca in Homeri Iliadem (scholia vetera)* (Berlin 1969–88)
Sch. Luc.	H. Rabe, *Scholia in Lucianum* (T) 1906
Sch. Nic. *Ther.*	A. Crugnola, *Scholia in Nicandri Theriaka cum glossis* (Milan–Varese 1971)
Sch. *Od.*	W. Dindorf, *Scholia graeca in Homeri Odysseam* (Oxford 1855)
Sch. Opp. *Hal.*	U. C. Bussemaker, *Scholia in Oppiani Halieutica*, in F. Dübner and U. C. Bussemaker, *Scholia in Theocriti Idyllia auctiora* : *Scholia et Eutecnii paraphrasis in Nicandrum* : *Scholia et paraphrasis in Oppianum* (Paris 1849): 260–364
Sch. rec. Ar.	Scholia recentiora in Aristophanem: W. J. W. Koster *et al.*, *Scholia in Aristophanem* (Groningen 1960–)
Sch. Soph.	P. N. Papageorgios, *Scholia in Sophoclis tragoedias vetera* (T) 1888
Sch. vet. Ar.	Scholia vetera in Aristophanem: W. J. W. Koster *et al.*, *Scholia in Aristophanem* (Groningen 1960–)
Schwyzer, *DGE*	E. Schwyzer, *Dialectorum graecarum exempla epigraphica potiora* (Leipzig 1923). (Repr. Hildesheim 1960)
Semonides	*IEG* (q.v.): ii. 98–114. (7th cent. BC)
Septuagint	J. W. Wevers *et al.*, *Septuaginta: Vetus Testamentum Graecum auctoritate Academiae Scientiarum Gottingensis editum* (Göttingen 1967–). (3rd–2nd cent. BC)
SIG^3	W. Dittenberger, *Sylloge inscriptionum graecarum*, 3rd edn. (Leipzig 1915–24)
Simias	*Coll. Alex.* (q.v.): 109–20. (3rd cent. BC)
Solon	*IEG* (q.v.): ii. 139–65. (7th–6th cent. BC)
Sophocles	H. Lloyd-Jones and N. G. Wilson (OCT) 1990 for complete plays; *TrGF* (q.v.), vol. iv for frr. (5th cent. BC)

Sophron	*PCG* (q.v.): i. 187–253. (5th cent. BC)
Soranus, *Gyn.*	P. Burguière, D. Gourevitch, and Y. Malinas, *Soranos d'Éphèse: Maladies des femmes* (B) 1988–2000. (2nd cent. AD)
Steph. Byz.	A. Meineke, *Stephani Byzantii Ethnicorum quae supersunt* (Berlin 1849)
Stobaeus	C. Wachsmuth and O. Hense, *Ioannis Stobaei Anthologium* (Berlin 1884–1912)
Strabo	W. Aly, E. Kirsten, and F. Lapp (Bonn 1968–72) for books 1–6; R. Baladié and F. Lasserre (B) 1966– for books 7–12; H. L. Jones (L) 1954–61 for books 13–16; A. Meineke (T) 1852–3 for book 17. (1st cent. BC–1st cent. AD)
Suda	A. Adler, *Suidae Lexicon* (Leipzig 1928–38)
Synag.	*Συναγωγὴ λέξεων χρησίμων*, I. C. Cunningham (Berlin–New York 2003)
Teleclides	*PCG* (q.v.): vii. 667–92. (5th cent. BC)
TGF	A. Nauck, *Tragicorum graecorum fragmenta*, revised edn. with supplement by B. Snell (Hildesheim 1964)
Theocritus	A. S. F. Gow, *Bucolici Graeci* (OCT) 1952, 1–129. (4th–3rd cent. BC)
Theognis (incl. spuria)	*IEG* (q.v.): i. 172–241. (7th–5th cent. BC+)
Theognost.	Theognostus, *Canones*, *An. Ox.* (q.v.): ii. 1–165
Theophrastus	F. Wimmer (Leipzig 1854–62) for *CP* and books 7–9 of *HP*; S. Amigues (B) 1988– for books 1–6 of *HP*. (4th–3rd cent. BC)
Theopompus	*PCG* (q.v.): vii. 708–49. (5th–4th cent. BC)
Thucydides	H. S. Jones (OCT) 1942. (5th cent. BC)
Tim. *Lex.*	*Τιμαίου σοφιστοῦ ἐκ τῶν τοῦ Πλάτωνος λέξεων*, C. F. Hermann, *Platonis dialogi secundum Thrasylli tetralogias dispositi*, vol. vi (T) 1884: 397–408
TrGF	B. Snell, R. Kannicht, and S. Radt, *Tragicorum Graecorum fragmenta*; vol. i, 2nd edn. (Göttingen 1986); vols. ii–iv, 1st edn. (Göttingen 1977–85)
Tragica adespota	*TrGF* (q.v.): ii. 3–319. (Various dates)
Trypho	A. von Velsen, *Tryphonis grammatici Alexandrini fragmenta* (Berlin 1853). (Repr. Amsterdam 1965)
Tyrannio	W. Haas, *Die Fragmente der Grammatiker Tyrannion und Diokles*. (Sammlung griechischer

	und lateinischer Grammatiker: iii. 79–184; Berlin–New York 1977)
Tyrtaeus	*IEG* (q.v.): ii. 169–84. (7th cent. BC)
Tz. Ar. *Nu.*	J. Tzetzes, *Commentarium in Aristophanis Nubes*, D. Holwerda (W. J. W. Koster, *Scholia in Aristophanem*, vol. iv.2; Groningen–Amsterdam 1960)
Tz. Ar. *Pl.*	J. Tzetzes, *Commentarium in Aristophanis Plutum*, L. Massa Positano (W. J. W. Koster, *Scholia in Aristophanem*, vol. iv.1; Groningen 1960)
Tz. Ar. *Ra.*	J. Tzetzes, *Commentarium in Aristophanis Ranas*, W. J. W. Koster (W. J. W. Koster, *Scholia in Aristophanem*, vol. iv.3; Groningen–Amsterdam 1962)
Tz. Hsd. *Op.*	J. Tzetzes, *Commentarium in Hesiodi Opera et Dies*, T. Gaisford, *Poetae minores Graeci*, vol. iii (Oxford 1820): 9–368
Vettius Valens	D. Pingree (T) 1986. (2nd cent. AD)
Xenophon	E. C. Marchant (OCT); vol. ii, 2nd edn. (1921); vols. i, iii, iv, v, 1st edn. (1900–20). (5th–4th cent. BC)
Zenobius	E. L. von Leutsch and F. G. Schneidewin, *Corpus paroemiographorum Graecorum*, vol. i (Göttingen 1839): 1–175. (2nd cent. AD)

General Abbreviations

acc.	accusative
adj.	adjective
adv.	adverb
aor.	aorist
Arm.	Armenian
Att.	Attic
C	consonant
dat.	dative
Et.	Etymology
f.	feminine
fut.	future
gen.	genitive
Gmc	Germanic
Goth.	Gothic
Gk	Greek
H	an Indo-European 'laryngeal' (*H_1, *H_2, or *H_3)
Hitt.	Hittite

IE	Indo-European
inf.	infinitive
Ion.	Ionic
Lat.	Latin
Lith.	Lithuanian
loc.	locative
m.	masculine
ME	Middle English
MHG	Middle High German
MLG	Middle Low German
Myc.	Mycenaean
n.	neuter
NE	Modern English
NHG	Modern High German
nom.	nominative
OCS	Old Church Slavonic
OE	Old English
OFri	Old Frisian
OHG	Old High German
OIr.	Old Irish
ON	Old Norse
OS	Old Saxon
pass.	passive
perf.	perfect
PGmc	Proto-Germanic
pl.	plural
pres.	present
R	resonant (*r*, *l*, *m*, *n*, *i̯*, or *u̯*)
sg.	singular
Skt	Sanskrit
V	vowel
voc.	vocative

Symbols

*	precedes a form that is unattested but once existed or may once have existed
**	precedes a form that is impossible or never existed
◦	(under the symbol for a resonant, e.g. *r̥*) indicates the resonant in vocalic function
‿	(under the symbol for a semi-vowel, e.g. *i̯*) indicates the semi-vowel in consonantal function
[ ]	enclose a phonetic symbol or sequence of phonetic symbols
//	enclose the symbol(s) for a phoneme or sequence of phonemes
-	over the symbol for a vowel, marks the vowel as long
+	after the name of an author, indicates that a word is also used by at least one further contemporary or later author; after a reference to a specific occurrence of a word, indicates that there is at least one further occurrence in the same author

INTRODUCTION

English words with the suffix *-ic* are usually stressed on the syllable immediately preceding the element *-ic*: *rhýthmic, magnétic*, *supersónic*, and so on. And yet some, such as *Árabic*, *Cátholic*, and *rhétoric*, are not. These exceptions to the general rule tend to be nouns rather than adjectives, or at least words that are sometimes nouns. (Notice, incidentally, that in many varieties of English *arithmétic* is the adjective corresponding to the noun *aríthmetic*.) Why does English have a general rule about the stress of words with *-ic*, why does this rule have exceptions, and why do the exceptions tend to be nouns? Were these words always stressed as in modern English, or have they somehow come to be stressed in this way?

These questions about stress in English will not be answered in this book. They are, however, very similar to some questions about ancient Greek to which I shall attempt to come within reach of an answer. This book is intended for readers with an interest in such questions, and in ancient Greek.

The aims of this book are quite modest. Readers should not look here for a mighty reference work or compendium of information on ancient Greek accents; for that one should go to Chandler's unsurpassed *A Practical Introduction to Greek Accentuation* (2nd edn., 1881; reprinted 1983). This is also not a handbook for those wishing to teach themselves where to accent ancient Greek words; for this purpose one might use Vendryes's *Traité d'accentuation grecque* (1904; reprinted 1945 with updated bibliography); Bally's *Manuel d'accentuation grecque* (1945; reprinted 1997); or my *A New Short Guide to the Accentuation of Ancient Greek* (2003). Nor do I offer a grand new theoretical account of the ancient Greek accent system; for some recent theoretical treatments, the reader might go to the articles by Steriade (1988), Halle (1997), Sauzet (1989), Golston (1990), and Noyer (1997). Rather, this book is an attempt to answer some quite specific questions, of the kind hinted at above, about the *history* of ancient Greek accentuation. On the way we shall delve into some general characteristics of the ancient Greek accent system, and of certain sorts of language change, but the point of all this will be to answer some questions about ancient Greek. The answers suggested have some repercussions for the understanding of phonological and morphological change, and particularly for the ways in which the frequency with which a word is used may encourage or inhibit certain types of change. In so far as the suggestions made

here relate to the early history of the accentuation of an Indo-European language, they also have some implications for the reconstruction of accentuation in Proto-Indo-European. But these wider suggestions will need to be tested further by those working on other languages.

If we were trying to answer the questions about English with which I began, an instructive first step would be to look at dictionaries, grammars, and descriptions of English from past years and centuries in order to find out as much as possible about the history of the pronunciation, and especially the stress, of words with *-ic*. In many cases we can have a fairly clear idea about when, by whom, and with what intention, a dictionary or grammar of English, or a description of English pronunciation, was produced; we understand something about what it means for, say, Robert Nares (*Elements of Orthoepy*, 1784) to have described a word in the late eighteenth century as stressed on a certain syllable, and for the second edition of the *OED* to describe the same word in the twentieth century as stressed on a different syllable.

For ancient Greek the situation is different. It is not immediately obvious how we can know anything at all about ancient Greek accentuation. Sophocles and Plato, it is frequently pointed out, did not write accents; when were accents first written, by whom, and with what purpose, and what does it mean if a Sophoclean word is accented in a certain way in a medieval manuscript? Secondly, even once we have direct evidence for the accentuation of an ancient Greek word, how can we hope to discover anything about the history (in fact the prehistory) of this word's accentuation, or about lines of development along which the accent system as a whole arrived at the state in which it is first directly attested?

Since any discussion of the prehistory of ancient Greek accentuation presupposes that something can be known about ancient Greek accentuation, and that some deductions may be made *indirectly* about stages of its history that are not known *directly*, this book begins with an introductory part whose purpose is to address these questions. It is divided into four chapters. The first outlines the sources of evidence for ancient Greek accentuation, and the second describes some of the characteristics of ancient Greek accentuation as we know it on the basis of this evidence. The third chapter discusses some deductions that may be made about the prehistory of the accentuation system, and how they may be made. The fourth chapter consists of a brief history of scholarship bearing on ancient Greek accentuation; it introduces the different sorts of scholarship (on Greek, on other Indo-European languages, and on accentuation systems in the world's languages more generally) that have contributed something to our knowledge of the subject and that contribute to the discussions in the second part of this book.

In order to make this book as self-standing as possible, I have said some things in the introductory part that are also said in my *A New Short Guide to the Accentuation of Ancient Greek* (2003); I hope that readers of both books, or those who simply know something about the subject already, will not mind skipping things they already know. On the other hand, having put what I think are the basic facts about ancient Greek accentuation into *A New Short Guide* I have not found it necessary to make the introductory part of this book a *general* introduction to the subject, and have referred the reader to *A New Short Guide* in places where a matter is discussed at greater length there than it needs to be here.

The second and longer part of this book is devoted more directly to questions of the sort that I began by promising to discuss. These questions relate to the prehistory of the patterns of accentuation found in nouns and adjectives with the thematic, or second-declension, suffixes -ρο-, -το-, -νο-, -λο-, and -μο-. For words with each suffix some accentual rules of thumb may be stated. For example, words formed with the suffix -ρο- are most often accented on the -ρο- (as λιγυρός 'shrill'). But, as in the case of English words with *-ic*, this generalization has some exceptions (such as ἄργυρος 'silver'). Such exceptions tend to be nouns, but by no means *all* nouns with -ρο- are exceptions (compare ἀγρός 'field'), and there are some exceptional adjectives (such as παῦρος 'small'). Why should there be a general rule for the accentuation of words with -ρο-, why does it have exceptions, and why do the exceptions tend to be nouns? Can the particular *sorts* of nouns that tend to be exceptions reveal anything about the prehistory of the accentuation of words with -ρο-?

This second part is divided into nine chapters (numbered 5 to 13). Chapter 5 serves as an introduction to Part II as a whole and places the sorts of questions to be investigated in the context of some general characteristics of the ancient Greek accentuation system and in the context of previous scholarship on these questions. The following four chapters (6 to 9) are devoted to studies of the accentuation of nouns and adjectives with the suffixes -ρο-, -το-, -νο-, and -λο-. Chapter 10 presents some preliminary conclusions about the prehistoric development of accentuation patterns for words with -ρο-, -το-, -νο-, and -λο-. Chapter 11 discusses words with the suffix -μο-, words which present at first sight rather different problems from those with -ρο-, -το-, -νο-, and -λο-, but which have, I suggest, responded over time to the same sorts of pressures, *mutatis mutandis*, as those with -ρο-, and -το-, -νο-, and -λο-. In general the conclusions offered in Chapters 10 and 11 apply to nouns with apparently anomalous accentuation rather than to adjectives; the discussion of interestingly accented adjectives is postponed until Chapter 12, which focuses especially on the groups of adjectives with the

complex or disyllabic suffixes *-ινο-*, *-ννο-*, *-ιμο-*, and *-υμο-*; this chapter touches on the reconstruction of accentuation patterns for Proto-Indo-European more directly than the rest of the book. The last chapter gives a brief summary of results and suggests some wider implications; for those who like to read books backwards I have tried to make it intelligible by itself.

The words forming the basis for the studies of Part II are listed in a series of five appendices, the first four subdivided into a section for adjectives and a section for nouns; Appendix 5 contains only nouns. The words in each appendix or section of an appendix follow the order of a reverse index. For each of the suffixes we are concerned with, the words considered consist of those listed in Buck and Petersen's reverse index (1945) (with the occasional addition of a word I have come across although it is omitted by Buck and Petersen) that can be analysed in historical terms as having been formed with the suffix in question, with the following exceptions:

(*a*) Compounds and words that are most probably compounds. 'Compounds' are taken to include prefixed words and derivatives of compounds or prefixed words.

(*b*) Words attested only on inscriptions and/or papyri, except in cases where I have been able to verify that such a word is marked with an accent on at least one papyrus where it appears. In such cases, a reference to the papyrus is given under the entry for the relevant word.

(*c*) Words first attested in an author later than the second century AD. Words *are* included if they are attested for a pre-second-century AD author in a quotation by a later author, but not if the only source for the word is Hesychius. Hesychius' lexicon survives in only one manuscript, whose accentuation is highly idiosyncratic (see Latte 1953–66: i. pp. viii, xxvii).

(*d*) Adjectives attested only in the comparative or superlative. The accentuation of the positive form of an adjective cannot be determined from the comparative or superlative. In such cases, LSJ have assigned accents according to general rules; they have done so admirably but these words obviously do not provide appropriate data for our investigations.

(*e*) Words existing only as conjectures or doubtful readings.

(*f*) An important exclusion is that of words that etymologically do not seem to have contained the suffix in question, or whose historical segmentation is obscure. Thus *πιαρός* 'fat' (historical segmentation *πιαρ-ό-ς*, not **πια-ρό-ς*; compare *πῖαρ* 'grease') is not included. A word such as *γλίσχρος* 'sticky; importunate' is not included because its etymology and therefore its historical segmentation is unclear.

(*g*) For *-ρο-*, words with *-τρο-* and *-θρο-* are not considered, since these suffixes are different from *-ρο-* in origin, semantics, and accentuation. Words with composite suffixes of type vowel + *-ρο-* (e.g. *-ηρο-*, *-υρο-*) have been included, however, since in origin they included a suffix *-ρο-*.

(*h*) For *-το-*, words formed with the suffix *-ᾱτο-*, which was borrowed from Latin (as in *ἰᾶτον* 'drink prepared from honey, wine, and violets'), are not included. Nor are words with superlative or ordinal suffixes in *-το-* (e.g. *ὕπατος* 'uppermost', *τέταρτος* 'fourth').

(*i*) For *-λο-*, words with *-θλο-*, *-τλο-*, and Latin *-ιολο-* are excluded.

At the end of each appendix or section of an appendix I have given a few examples of excluded words, with a brief indication of the reason for their exclusion. For example, at the end of section 1.1 listing adjectives with the suffix *-ρο-*, '*αἰσχυντηρός* (only attested in the comparative)'. No attempt is made to list exclusions exhaustively but only to illustrate the principles on which words have been excluded, and in particular to mention any words whose exclusion I thought might occasion surprise.

Where there is a large number of words of very similar formation and uniform accentuation (e.g. nouns with *-σμο-* accented on the final syllable), the lists of words given in the appendices have been abbreviated. In such cases, a few of the words (including all Homeric words) have been listed and the number of further words counted is indicated at the point in the sequence of words where abbreviation begins.

The entry for each word is provided with a brief note on its etymology and, where I have used evidence other than that of printed texts, the evidence for its accentuation. A note on the accentuation of the word is also provided if I found more information in printed sources than simply a particular accent. The end of each entry records in abbreviated form and for ease of reference information about the word that is crucial for the discussions to which the relevant appendix relates (for example, F = 'finally accented'; R = 'recessive'). Each section of an appendix begins with a key to the abbreviations used in that section. The following typical entry (p. 319) may serve to illustrate the general principles (on which see further p. 316 and the opening of each section of an appendix):

λιπαρός, ***ᾱ́***, ***όν*** 'oily, shiny with oil'. Hom. (*Il.* 2. 44+)+. ET: *λίπα* (adv.) 'richly(?)', *λιπαίνω* 'oil, anoint'. ACCENT: Arc. 80. 14. F.

Etymological information is given because my conclusions are in part historical and consequently need to be based both on the attested history and on the prehistory of the words studied. The etymological notes are, however, intended only to justify my inclusion of a particular word in a list of words formed, historically speaking, with a certain suffix. A related word cited (such as *λίπα* or *λιπαίνω* in the example above) is not necessarily the actual base for the derivation of our word

but merely a word formed on the same root and lacking our suffix. Related words are cited where possible from ancient Greek itself. Where ancient Greek offered no clearly related words or where forms from other languages could add some elucidation, such forms have been adduced as in the following example (p. 330):

παῦρος, ον 'little, small'. Hom. (*Il.* 2. 675+)+. ET.: Root of Lat. *pau-cus* 'few, little', Goth. *faw-ai* 'few': see Chantraine (1968–80: 865); Risch (1974: 70). R.

Here I have preferred, where possible, to cite a form from a language of which I have at least some knowledge (while keeping in mind, I hope, proverbs about a little knowledge) than to cite one from a language of which, regrettably, I have none. This preference explains why I do not cite forms from, for example, Old Irish, Albanian, Armenian, or Old Church Slavonic more often than absolutely necessary.

The etymologies given do not pretend to any originality. They are based mainly on Frisk's *Griechisches etymologisches Wörterbuch* (1960–72), a work that has always been consulted even where it is not explicitly cited.[1] Other authorities who have been followed are adduced where appropriate, if they do not merely agree with Frisk. I have not attempted to trace every etymology back to its source. Where a general reference work such as Frisk's (1960–72) is mentioned, earlier bibliography may be found there. It should be stressed that the focus of this book is not on etymologies. Etymology is employed merely as a tool to arrive at lists of words containing what was at least historically a given suffix, and a conservative line has been taken here. Words whose historical segmentation is uncertain have been excluded from the data on which conclusions (and statistical arguments) have been based, although some of these words have been mentioned in the text where appropriate.

Evidence for accentuation is cited in the appendices according to the following criteria. Where the accent of a word is discussed in ancient

[1] As a main guide, I have preferred Frisk's etymological dictionary to Chantraine's (1968–80) because of Chantraine's greater tendency to reconstruct heteroclitic athematic forms (especially *r*/*n*-stems) for which there is no evidence other than various formations (thematic or athematic, nominal or verbal) with suffixes containing different consonants, a procedure that Chantraine owed to Benveniste (see Benveniste 1935, *passim*). While I do not wish to deny that thematization was available in the Indo-European parent language and may even have been the ultimate origin of certain thematic suffixes such as *-ro-* and *-no-*, it is now generally accepted that Benveniste went too far in postulating athematic pre-forms to account for words that are more easily regarded as derived directly by means of a thematic suffix such as *-ro-* or *-no-* (see e.g. Wachter 1997, esp. 5–6). The parent language, at least at its directly reconstructable stage, had various thematic suffixes including *-ro-* and *-no-*, and these are often found added directly to roots that are also found with a series of other primary suffixes, but not with the suffixes in paradigmatic alternation.

grammatical sources, one or more references to grammarians are given and generally no other evidence is mentioned. Some words are discussed by grammarian after grammarian, and at first glance it might look as if we can be especially certain of their accentuation, more so than for a word that is cited by only one ancient grammatical source. However, different grammarians who mention the accent of the same word cannot generally be counted with any certainty as independent witnesses, since grammarians copy earlier grammarians on a grand scale. I do not, therefore, necessarily mention every grammatical source for a given accent unless there is a particular reason to do so, e.g. grammarians disagree with one another or there are problems of text or interpretation. Given the prominence the ancient tradition accorded to Herodian's *Περὶ καθολικῆς προσῳδίας*,[2] I have always cited the two surviving summaries of this work where possible, generally mentioning other sources only where these summaries give us nothing or where other sources disagree or add something of interest. Although I do not cite the fragmentary works of Herodian from Lentz's edition (or rather reconstruction) of 1867–70,[3] preferring to go back to more primary sources, I have consulted Lentz's work constantly and followed up relevant references as well as making use of my own reading of relevant grammarians and scholia.

Where there is no evidence from ancient grammarians, I have had to rely much more on secondary sources, particularly printed editions and any relevant remarks made by editors in their textual apparatus. I would have liked to go back to early accented manuscripts and, where possible, to accented papyri, but a systematic study of these sources at present would have taken me too far afield. I have, however, looked at some published editions of papyri and facsimile editions of manuscripts, and satisfied myself that these sources would have made very little difference to the data on which the present work is based. Data from papyri and facsimile editions of manuscripts are occasionally mentioned in the appendices, where I have come across some relevant information, but I have not studied these sources in a systematic way. Modern editions, with their critical apparatus, are cited wherever I have gained from them some suggestion that the manuscript evidence for the accentuation of a word is not consistent.

Certain English words that are useful for discussions of Greek accentuation, such as 'accent' and 'noun', have become embarrassingly ambiguous, and it is worth clarifying the senses in which I shall use them.

[2] See p. 22. [3] See pp. 22–3 with n. 19.

Traditionally, 'accent' referred to any kind of phonetic prominence making a syllable stand out from those around it, and was also used more narrowly as a synonym for 'word accent', a phonetic prominence attaching to one syllable in a word. Two types of accent were distinguished, some languages having 'pitch accent' and others 'stress accent', also called simply 'stress'. The ancient Greek accent was regarded as a pitch accent, and so one might refer to it with the term 'accent' (a cover term for 'pitch accent' and 'stress accent') but not with 'stress' (which only meant 'stress accent').

More recently, the distinction between 'pitch accent' and 'stress accent' has been debated (see pp. 55–7), and some linguists no longer distinguish between 'pitch' and 'stress' accent in the traditional way but redeploy the terms 'stress' and 'accent' for other purposes. Abercrombie (1991) and Halle (1997), for example, use the term 'accent' to denote an abstract feature attached to some syllable or syllables in the mental representation of a particular word. 'Accent' may or may not translate into phonetic prominence, depending on the operation of phonological rules that translate the mental representation into the form of the word actually uttered (the 'surface form'; see p. 113). A 'stressed' element, on the other hand, is 'one that is phonetically more prominent than other elements in the word' (Halle 1997: 278 n. 1). 'Stress', then, is a phonetic feature whereas 'accent' is an abstract or underlying feature. As a result, Halle uses the term 'stress' of ancient Greek as long as he is talking about actual phonetic prominence: 'Greek places stress on one of the last three syllables of the word' (Halle 1997: 304), etc. The fact that traditionally ancient Greek is not described as a 'stress accent' language is irrelevant for this use of the term 'stress'.

Unfortunately, this is not the only way in which the terms 'stress' and 'accent' have been used to distinguish between abstract feature and phonetic prominence. Bolinger (1958) uses 'stress' for an abstract lexical feature and 'accent' for prominence actually perceived in an utterance.[4]

It is unfortunate that the terms 'stress' and 'accent' have acquired such a variety of mutually contradictory uses, and it is tempting to avoid these words altogether. But they are difficult to avoid without inventing new and unfamiliar terms, a procedure that can equally lead to confusion. I therefore retain the terms 'stress' and 'accent' and use them in their traditional senses. 'Stress' is used only in relation to languages traditionally described as 'stress accent' languages; the term does not occur often in this book, since the language under investigation is traditionally described as a 'pitch accent' language. I use the term 'accent' in relation

[4] For the different senses of the word 'accent', see also Ladd (1996: 286 nn. 2, 3, 4). For an older list, see A. Schmitt (1924: 1–3).

to any language that typically marks one syllable per word as more prominent than the others (e.g. English, ancient Greek).

When it is necessary to distinguish between actual phonetic prominence and an abstract feature of the mental representation that may or may not be realized as phonetic prominence, I refer to the former as 'surface accent' and the latter as 'inherent accent' or 'underlying accent'. What constitutes an 'accent', in our sense of the word, will be discussed in some more detail in Chapter 2.

The term 'pitch accent' is also sometimes given a different sense from its traditional one. Bolinger (1958) first used it to describe a pitch change associated with the phonetic prominence of a syllable, whether or not the language involved was traditionally termed a 'pitch accent language'. As Ladd (1996: 46) says, this sense of the term is 'now in general use' (among linguists working on intonation). The term 'pitch accent' does not occur often in this book, but where it occurs it has its traditional sense (the implications of which are discussed on pp. 55–7).

The word 'noun' is used in the meaning 'substantive' (a use that has become widespread in modern work), not in its more traditional use as a cover term for both substantives and adjectives. The word 'nominal' (in phrases such as 'nominal accentuation', 'nominal form') is used in the sense 'pertaining to nouns and adjectives', as in current Indo-European studies (cf. the title of Lubotsky's (1988) book *The System of Nominal Accentuation in Sanskrit and Proto-Indo-European*, a book treating of the accentuation of nouns and adjectives). The Latin term *nomen agentis* is used to denote a nominal form (whether adjective or noun) derived from a verb and referring to an agent. *Nomen actionis* is used similarly for a nominal form derived from a verb and denoting an action. I use the term 'suffix' to mean any significant element of a word occurring after the root (or the last root element, in the case of a compound); an inflectional ending is thus a type of suffix.

A further terminological (and linguistic) peculiarity should be mentioned in connection with suffixes. On p. 64 I speak of the accusative plural ending *-ους* of *λιγυρούς* 'shrill' (acc. pl. m.) and the genitive plural ending *-ων* of *λιγυρῶν* (gen. pl. m./f./n.), noting that the ending *-ους* takes an acute accent if it is accented at all, while *-ων* takes a circumflex if accented at all. But on pp. 117, 149 I treat *λιγυρός* 'shrill', with its various forms for different cases, numbers, and genders, as if it contained a suffix *-ρο-* alternating with *-ρου-*, *-ρω-*, and so on, and have occasion to note that the derivational suffix *-ρο-* is often accented where it is the last derivational suffix in a word. Thus, *λιγυρούς* has the accent on the derivational suffix, here in its form *-ρου-*. In the form *λιγυρούς* the syllable on which the accent falls is thus related to the fact that *-ρου-* is a form of the derivational suffix *-ρο-*, while the type of

accent (acute rather than circumflex) is accounted for by the presence of the accusative plural ending *-ους*.

There would appear to be a contradiction here: do the vowels *-ο-* (nom. sg. m.), *-ου-* (acc. pl. m.), *-ω-* (gen. pl. m./f./n.) etc. belong to the various forms of the suffix '*-ρο-*' or to the inflectional endings? In reality, no clear dividing line can be drawn in synchronic terms between a second-declension derivational suffix such as *-ρο-* and the following case/number/gender ending. The *-ου-* of *λιγυρούς* is both part of the accusative plural masculine marker *-ους* and part of a form of the suffix *-ρο-*. The final *-ς* does not by itself give as much information about the case, number, and gender of the form as it does in combination with preceding *-ου-*, since *λιγυρός* (nom. sg. m.), *λιγυροῖς* (dat. pl. m./n.), *λιγυρᾶς* (gen. sg. f.), *λιγυρᾱ́ς* (acc. pl. f.), and *λιγυραῖς* (dat. pl. f.) would also have an 'ending' *-ς* if the preceding vowel were taken to belong to the derivational suffix. On the other hand, a stem that genuinely ended in *-ρ* would require a different set of case endings. Thus, the accusative plural of *πατήρ* 'father' (stem *πατηρ* alternating with *πατερ-* and *πατρ-*) is *πατέρας*, with ending *-ας*.

Notice that the point being made here is a synchronic one, not a historical one. Historically, the derivational suffix of *λιγυρός* was originally **-ro-*, and *λιγυρός* is formed from the stem *liguro-* and the nominative singular masculine ending *-s*, while the accusative plural masculine *λιγυρούς* comes from **liguróns,* that is to say the stem *liguro-* and an accusative plural marker **-ns*. This accusative plural marker **-ns* is also responsible (in a postconsonantal form **-n̥s*) for the *-ας* of *πατέρας*, which goes back to **patérn̥s*. Synchronically, there are various possible analyses, but my preference is to regard the vowels in the final syllables of second- and first-declension words, e.g. the *-ου-* of *λιγυρούς*, as belonging synchronically both to the derivational suffix (or simply to the stem, in the case of a second- or first-declension word with synchronically unanalysable stem) and to the ending.

The term 'Indo-European' (abbreviated IE) is used both as an adjective applying to the languages regarded as sharing the language family that includes ancient Greek, and as a noun denoting the parent language of this family. The term is thus used where one might also use 'Proto-Indo-European'. The word 'Greek' is used as a synonym for 'ancient Greek', as in much work dealing primarily with ancient Greek. Where the modern descendant is referred to, the term 'modern Greek' is employed. 'Homer' is used as a conventional label for the authors of the *Iliad* and *Odyssey*, and to refer to those works themselves, but for no other works. The *Homeric Hymns*, for example, are not intended when I say 'Homer'. The terms used to refer to the different possible positions for the Greek word accent are explained on pp. 62–9, when the necessary background on Greek accentuation has been given.

I have attempted not to encumber this book more than necessary with items from the increasingly vast technical terminology that theoretical linguistics has grown. Some concepts of linguistic description will, however, prove useful along with the terms that refer to them. Those that are most likely to be unfamiliar are explained when they are first introduced, but for ease of reference these, as well as some more widespread terms that are not explained in the text, are included in a glossary of technical terms (pp. 412–16).

I have generally followed LSJ when glossing single Greek words; all translations of actual Greek sentences are mine. I make occasional use of the gender-neutral pronouns 'he' and 'his'; I belong to those whose linguistic prejudices are offended by any of the other possibilities.

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Part I

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1 EVIDENCE FOR THE GREEK ACCENT

1.1 Introduction

When we read any classical[1] or pre-classical Greek author in a modern printed text, we read a text with accents marked using the acute (´), circumflex (ˆ), and grave (`) signs. But classical and pre-classical authors did not write accent marks, which almost certainly had not been invented in their day (cf. pp. 19, 21). An obvious question to ask is therefore how, and indeed whether, we can have accurate information about the accentuation of Greek at a period when signs for accents had not been invented. Before this question can be answered in full, a prerequisite is to consider the origins and basis, even if post-classical, of the accent marks we read in our texts, and to investigate the other sources of evidence for the accentuation of Greek at *any* period in antiquity. If, as we shall see is the case, all direct sources of evidence are post-classical, it may nevertheless be possible to make some deductions about the accentuation of earlier periods, but we must begin with the actual sources. The purpose of the present chapter, therefore, will be to survey the various types of evidence available and to explicate their basis. Although in evaluating these sources we shall have occasion to touch on matters relating to early periods of Greek, the question of deductions that can be made about the classical and pre-classical periods will be taken up in full in Chapter 3.

We have two main sources for the accentuation of ancient Greek: the statements of grammarians and the accents written in medieval manuscripts. Additional evidence comes from the accents found sporadically in some papyri, and from the surviving fragments of ancient Greek music. The following discussion will touch on all of these sources, but will treat the grammarians in considerably more detail than the others. Apart from ancient Greek music, which for the most part merely helps to confirm what we know from other evidence (but see p. 48 with n. 87, p. 59), all of our sources are ultimately dependent on the activities of ancient grammarians. It is therefore particularly important to confront questions such as who these grammarians were, what they knew about accents, and how they knew it. In order to set the grammarians in the wider context of the learned world they inhabited, we shall begin in the next section with a discussion of the kinds of interest in accents

[1] 5th- or 4th-cent. BC.

attested by certain texts that precede, or stand outside, the grammatical tradition as such.

The discussion of the evidence for the ancient Greek accent is followed by a brief summary of the deductions that can be made from medieval accent-based poetry and rhythmic prose about the accentuation of Greek in the early Middle Ages. This evidence is fundamentally independent of, and can serve as a check on, our sources for the accentuation of Greek in antiquity.

1.2 Accents without accent marks

Although classical and pre-classical authors did not write accent marks, they occasionally mention accents. Socrates in Plato's *Cratylus* mentions changes of accent, along with the addition or loss of letters, as a type of change that a word or phrase may undergo. Thus, the phrase *Διὶ φίλος* becomes a name (*Δί̓φιλος*) by the loss of an iota and a change of accent (*Cra.* 399b). Although the change of accent did not manifest itself in writing (Plato would have written *Διὶ φίλος* as *ΔΙΙΦΙΛΟΣ* and *Δί̓φιλος* as *ΔΙΦΙΛΟΣ*), Plato makes no distinction here between changes that affect only the spoken word and those that concern also the written word. Some passages of Aristotle, however, provide indications of an awareness that the presence of accents (and breathings[2]) in speech but not in writing constituted a significant discrepancy between the written and the spoken language. These passages suggest that sophists exploited the lack of accents (and breathings) in written Greek to create problems or paradoxes dependent on the ambiguity of particular words or phrases as written without accents.[3] Did Homer make Nestor at *Il.* 23. 328 describe the wooden post that provided a turning point for the chariot race as *not* rotting in the rain, *τὸ μὲν οὐ̓ καταπύθεται ὄμβρῳ*, or as *partly* rotting in the rain, *τὸ μὲν οὖ̓ καταπύθεται ὄμβρῳ*?[4] Did Zeus say to

[2] In Aristotle's time the sound *h-* was not normally indicated in Attic writing; see W. S. Allen (1987: 52–3).

[3] On Aristotle's treatment of such problems, see Edlow (1977: 26–8).

[4] Aristotle, *SE* 166^{b}3–6, *Po.* 1461^{a}21–3. (There are in fact two ways of construing the version with *οὖ̓*, both implying that the post was only partly rotting: see Wackernagel 1893: 9.) A specific sophist, Hippias of Thasos, is named in the *Poetics* as having solved this and the following problem. The medieval commentators on Aristotle (see *CAG*: ii. iii. 33. 6–34. 2, xxiii. iv. 8. 20–32), as well as several modern commentators (see Bywater 1909: 337–8; Lucas 1972: 243–4), take Hippias' interpretation to be that involving the negative *οὐ̓*. As Wackernagel (1893: 8–12) argues, however, the interpretation with *οὐ̓* is by far the more natural and it is highly unlikely that the line was universally interpreted with *οὖ̓* until Hippias by a stroke of genius saw that *οὐ̓* was required. Hippias could have been refuting specific sophists who interpreted *OY* as *οὖ̓*, rather than a *communis opinio*, but in that case Aristotle's wording would be very odd: he suggests that Hippias uncovered the correct accentuation, not that he merely disagreed with those who

Agamemnon's dream δίδομεν δέ οἱ εὖχος ἀρέσθαι '*We grant* him the fulfilment of his desire', or διδόμεν δέ οἱ εὖχος ἀρέσθαι '*Grant* him the fulfilment of his desire'?[5] Such Homeric phrases should not have been thought ambiguous at a time when the Homeric poems existed exclusively in the context of an oral tradition, nor at a time when their transmission was essentially oral even if they also existed in writing. The perception of such ambiguity in the fourth century BC is connected to the rising importance of writing in the transmission of works of literature, including the Homeric poems (see Blanck 1992: 113–18). The wider significance of a growing consciousness of the written word at this period is a point to which we shall return below.

At *SE* $177^{b}35$–$178^{a}3$, Aristotle illustrates the sort of logical paradox that, although rare, could be produced in writing as a result of the lack of written accents:

> παρὰ δὲ τὴν προσῳδίαν λόγοι μὲν οὐκ εἰσίν, οὔτε τῶν γεγραμμένων οὔτε τῶν λεγομένων, πλὴν εἴ τινες ὀλίγοι γένοιντ' ἄν, οἷον οὗτος ὁ λόγος· ''ἆρά γ' ἐστὶ τὸ οὗ καταλύεις οἰκία;'' ''ναί.'' ''οὐκοῦν τὸ 'οὐ καταλύεις' τοῦ 'καταλύεις' ἀπόφασις;'' ''ναί.'' ''ἔφησας δ' εἶναι τὸ οὗ καταλύεις οἰκίαν· ἡ οἰκία ἄρα ἀπόφασις.'' ὡς δὴ λυτέον, δῆλον· οὐ γὰρ τὸ αὐτὸ σημαίνει ὀξύτερον τὸ δὲ βαρύτερον ῥηθέν.
>
> And there are no arguments, either written or spoken, dependent on prosody, apart from some few, such as the following: 'Is where you lodge (οὗ καταλύεις) a house?' 'Yes.' 'And ''you don't lodge (οὐ καταλύεις)'' is a negation of ''you lodge''? 'Yes.' 'And you said that where you lodge (οὗ καταλύεις) is a house. So a house is a negation.' The solution is obvious. For it [sc. the word οὐ/οὗ] does not mean the same thing when spoken on a higher pitch as it does when spoken on a lower pitch.

proposed an alternative to what was generally assumed. It is much more likely that Hippias proposed the interpretation with οὗ rather than with οὐ in response to a perceived problem, presumably that oak- and pine-wood are not immune (though both are resistant) to rot. (The properties of pine in particular are discussed by the medieval commentators (cited above), who, however, assume that pine rots only when exposed to salt water, not when exposed to rain water, and hence that the correct reading is with οὐ.) In addition, the passage in the *SE* states that those who 'solve' the problem pronounce the *OY* 'on a higher pitch' (ὀξύτερον). It is likely that οὗ was pronounced on a higher pitch than οὐ and therefore that Hippias' 'solution' to the problem involved taking the intended word to be οὗ.

[5] *SE* $166^{b}6$–8, *Po.* $1461^{a}21$–3. The direct textual tradition does not include the words in question for Zeus' speech at *Il.* 2. 8–15, but clearly Hippias and Aristotle knew a text that contained the words at *Il.* 2. 15; West prints the words in that line (with the accentuation δίδομεν, indicative). *ΔΙΔΟΜΕΝ* was normally interpreted as the indicative, δίδομεν, but offence was taken on account of the fact that δίδομεν δέ οἱ εὖχος ἀρέσθαι would be a lie in the mouth of Zeus. The solution involving the infinitive (used imperatively) would make Zeus merely order the *dream* to tell a lie. See *CAG*: ii. iii. 34. 2–35. 8, xxiii. iv. 8. 32–4; Lucas (1972: 242–3).

Aristotle (*SE* 166^{b}1–3) emphasizes the importance of writing for conundrums and paradoxes of this type:[6]

παρὰ δὲ τὴν προσῳδίαν ἐν μὲν τοῖς ἄνευ γραφῆς διαλεκτικοῖς οὐ ῥᾴδιον ποιῆσαι λόγον, ἐν δὲ τοῖς γεγραμμένοις καὶ ποιήμασι μᾶλλον.

In unwritten discussions it is not easy to produce an argument that depends on prosody, but in written discussions and [written?] poetic works it is easier.

Words and phrases that were ambiguous in writing because of the absence of accents from written Greek were, of course, unambiguous when spoken. It followed that if an incorrect accent was pronounced an unintended meaning could result. The experience of speaking modern languages suggests, however, that in some cultural circumstances the use of a potentially misleading pronunciation is less likely to result in genuine misunderstanding, since context tends to clarify what is intended, than in ridicule. Genuine misunderstanding, where it occurs, arises from the hearer's ability to make reasonable sense of the utterance on the assumption that the words have been pronounced correctly; he fails to resort to the possibility that a mispronunciation has occurred. Ridicule, on the other hand, depends on the cultural importance attached to correct pronunciation. A fifth-century incident provides our first example of ridicule as a reaction to an incorrectly accented Greek word, and possibly a sign that correct accentuation in Greek speech was becoming a mark of social standing. The actor Hegelochus pronounced Euripides' line *ἐκ κυμάτων γὰρ αὖθις αὖ γαλήν' ὁρῶ* ('For after the waves I see a calm again'; *Or.* 279) as *ἐκ κυμάτων γὰρ αὖθις αὖ γαλῆν ὁρῶ* ('For after the waves I see a weasel again'). The blunder was exploited by several comic poets[7] and, presumably, enjoyed by their audiences.

The classical period thus shows signs of a self-conscious awareness both of the importance of correct accentuation in speech and of the significant absence of accents in writing. The interest in writing that is displayed is connected to a rise in the importance of the written word as a means of distributing information and disseminating and preserving literary compositions. A somewhat paradoxical consequence of the interest in writing displayed by an increasingly literate culture was the

[6] At *SE* 169^{a}27–9 Aristotle appears to allow that one may make the mistake of thinking that a change in pitch makes no difference to the meaning of a spoken word (since for the most part Greek words are indeed not distinguished by accent); cf. Edlow (1977: 27 n. 54). This passage does not, of course, invalidate his emphasis in other passages on the discrepancy between speech and writing with respect to accents. When listening to speech, it could happen that one failed to take proper notice of the accentuation, but for the reader of the written word the accentuation was not even potentially usable.

[7] See Aristophanes, *Ra.* 303–4 with Sch. Eur. O*r.* 279; Sch. vet. Ar. *Ra.* 303a, b, d; Sch. rec. Ar. *Ra.* 303c, f; Tz. Ar. *Ra.* 303a.

discussion, and in particular the discussion in writing, of questions relating particularly to speech, such as accentuation. Written discussions of accent are difficult without a system for writing the accents and a set of terms for referring to them, and it is possible that Aristotle and the sophists employed some lectional signs to indicate accentuation in written discussion of such questions (so Laum 1928: 105–8). Whether or not they did, however, the significance of the accents was precisely that, except possibly in such special contexts, signs for accents were *not* employed in writing.

We shall consider in the next section the development of a grammatical tradition relating to accents, with a system of three signs for accents and an adequate terminology, but for most purposes Greek continued to be written without accent marks until the Middle Ages. Outside the grammatical tradition in a fairly narrow sense, we continue to find comments on accents that recognize the same discrepancy between speech and writing as we have encountered for the classical period. In the second century AD Galen (18(2). 517. 15–519. 3), in his commentary on Hippocrates' *De fracturis*, observes that the correct accentuation of Hippocrates' word *γαῦσος/γαυσός* 'crooked' is unclear, since the word is not current among speakers of the Koine (*οὐ γάρ ἐστιν ἐν ἔθει τῷ τῶν Ἑλλήνων ἡ φωνή*). After summarizing the arguments in favour of each accentuation, Galen advises the reader that if one is speaking to somebody who says *γαῦσος* one should follow suit, and conversely one should say *γαυσός* in conversation with somebody who does likewise:

ὁποτέρως οὖν τις θέλει φθέγγεσθαι συγχώρει. κἂν ποτέ σοι καὶ τὴν ὀξεῖαν τάσιν εἰπόντι γαυσός—ἐπὶ τοῦτο γὰρ μόνον ἐπειράθην ῥεπόντων τῶν ἀναγινωσκόντων τὸ βιβλίον—ἄν τ' εἴπῃ τις ἀξιῶν προπερισπᾶν,[8] *ὡς ἂν ἐκεῖνος ἐθελήσῃ καὶ σὺ φθέγγου, καὶ πάλιν ἂν ἑτέρῳ συντύχῃς ὀξυτονεῖν ἐθελόντι, καὶ αὐτὸς οὕτως πρᾶττε καταφρονῶν καὶ τόνων καὶ ὀνομάτων, ὡς οὔτε πρὸς φιλοσοφίαν συντελούντων, πολύ γε μᾶλλον οὔτε πρὸς γεωμετρίαν ἢ ἀριθμητικὴν ἢ μουσικὴν ἢ ἀστρονομικήν, ὥστε εἰ μηδεμία τέχνη δέεται πρὸς τὸ ἑαυτῆς τέλος τῆς τῶν ἐπιτρίπτων τούτων ὀνομάτων μακρολογίας, οὐ μόνον οὐ χρὴ προσίεσθαι τὸ ἐπιτήδευμα τῶν ἀνδρῶν, ἀλλὰ καὶ καταγελᾶν ὡς μάλιστα.* (Galen 18(2). 518. 9–519. 3)

However somebody wants to pronounce the word, defer to him. And if somebody should speak to you as you pronounce the acute accent, *γαυσός* (for this is the only pronunciation I've experienced people leaning towards as they read the book), thinking it right to give it a circumflex on the penultimate, pronounce the word as he wants it, and then again if you come across somebody who wants to pronounce it *γαυσός*, do likewise, making light of accents and words, since they don't contribute to philosophy, still less to geometry,

[8] Kühn's text reads *ὁποτέρως οὖν τις θέλει φθέγγεσθαι συγχωρεῖ κἂν ποτέ σοι καὶ τὴν ὀξεῖαν τάσιν εἰπόντι γαυσός. ἐπὶ τοῦτο γὰρ μόνον ἐπειράθην ῥεπόντων τῶν ἀναγινωσκόντων τὸ βιβλίον, ἄν τ' εἴπῃ τις ἀξιῶν προπερισπᾶν, . . .* I alter *συγχωρεῖ* to *συγχώρει* and change the punctuation in order to give the sense as seen by Kühn in his Latin translation.

arithmetic, music, or astronomy. Seeing that no science requires for its goal the long discussions of these wretched words, one must not only not accept people's concern with such things, but even ridicule it as much as one can.

Galen's discussion belongs to a world in which one read Hippocrates (and Galen) in texts without accent marks, yet needed to accent each spoken word when reading a text aloud (the usual ancient method of reading) or discussing it with others. Galen's professed contempt for long discussions of such questions as the correct accent of *γαῦσος/γαυσός* gives an insight into a society in which questions of accentuation figured among the linguistic discussions and arguments taking place in educated circles. For Galen and his audience they are, however, questions that very much concern *speech*: the accent of *γαῦσος/γαυσός* was uncertain because Galen and his contemporaries knew the word through writing and not through speech, yet needed to be able to pronounce it (*φθέγγεσθαι*).

The rhetor Hermogenes, Galen's contemporary, discusses, like Aristotle, the ambiguity that can arise from the absence of accents in written Greek. The example he gives involves the ambiguity that existed in writing between *δημόσια* 'public property' (nom./acc. pl. n.) and *δημοσίᾱ* 'public property' (nom. sg. f.):

ἐκ μὲν προσῳδίας, οἷον ἑταίρα χρυσία εἰ φοροίη, δημοσια ἔστω, πεφώραταί τις φοροῦσα, καὶ ἢ μὲν τὰ χρυσία φησὶν εἶναι δημόσια, προπαροξυτόνως ἀναγινώσκουσα τὸν νόμον, οἱ δὲ οὐ τὰ χρυσία ἀλλ' αὐτὴν δημοσίαν εἶναι, παροξυτόνως ἀναγινώσκοντες· (Hermogenes, *Stat.* 2. 111–15)

An example (of ambiguity) arising from prosody is the following: 'If a courtesan should steal gold pieces, they/she shall be public property'. Now suppose a courtesan has been caught stealing. She says that the gold pieces are to be public property, reading the law aloud with the word *δημόσια* accented on the antepenultimate syllable, whereas others, reading out the word with the accent on the penultimate syllable, say that she herself is to be public property, not the gold pieces.[9]

Accentuation was thus a component of the spoken language that attracted interest during the classical period, when the system of three signs for marking accents had not been invented, and during the subsequent centuries when the system, although invented, was not used for ordinary purposes. The absence of accents from writing lent a *special* importance to the accentuation of speech. The correct accent of

[9] It is of interest that Hermogenes makes no mention of the length of the final *α* of the word under discussion, since *δημόσια* and *δημοσίᾱ* were distinguished not only by the position of the accent but also by the length of the final vowel. Since, however, distinctions of vowel length were being lost around Hermogenes' time (see Threatte 1980: 385–7), it is quite possible that the only salient difference in speech between *δημόσια* and *δημοσίᾱ* was by this time the accent.

γαῦσος/*γαυσός* was a subject for pedantic discussion precisely because a definite answer had not been handed down through written texts. Logical paradoxes could be produced in writing by playing on ambiguities that did not exist in speech, and the necessity to add accents when converting the 'letter' of the law into speech occasionally provided scope for controversy.

It is against this background of interest in correct accentuation on the one hand and the absence of accents from the increasingly important written word on the other that we need to see the development of a grammatical tradition relating to accents, one concerned particularly with the establishment of the correct text, pronunciation, and interpretation of ancient works of literature. It is to this tradition that we now turn.

1.3 Grammarians

The value that Hellenistic culture placed on written texts of literary works resulted in the foundation of several libraries, and importantly of the most extensive among them at Alexandria.[10] The grammatical tradition relating to accentuation originated among the group of scholars working in Hellenistic Alexandria. Aristophanes of Byzantium, librarian at Alexandria in the early second century BC,[11] is credited with the invention of written marks for accents, breathings, and vocalic lengths in a passage appearing in two manuscripts[12] of 'Arcadius' (on whom see below):

οἱ χρόνοι καὶ οἱ τόνοι καὶ τὰ πνεύματα Ἀριστοφάνους ἐκτυπώσαντος γέγονε πρός τε διαστολὴν τῆς ἀμφιβόλου λέξεως, καὶ πρὸς τὸ μέλος τῆς φωνῆς συμπάσης καὶ τὴν ἁρμονίαν, ὡς ἐὰν ἐπάδοιμεν φθεγγόμενοι. (Arc. 211. 8–12)

The (marks for) quantities and pitches and breathings, which Aristophanes created, were devised for the purpose of disambiguating an ambiguous reading and for the singing of the whole voice and the melody, as if we were to sing along to our speaking.

Although it is impossible to prove that Aristophanes did invent the system of three accent marks, there is no good evidence that they existed *before* his time (see Laum 1928: 103–14): the preceding centuries have left us not a single document containing an accent mark, and no remark that presupposes the system of three signs. If Aristotle and his contemporaries used some lectional signs to indicate accents (see p. 19), they are very unlikely to be the three signs that appear later, for the terms

[10] On the beginnings of Greek book collection, and on the Hellenistic libraries, see Blanck (1992: 133–52).

[11] The exact dates are uncertain; see Pfeiffer (1968: 171–2).

[12] Parisinus 2102 and 2603; see Lameere (1960: 90–2 n. 3).

Plato and Aristotle use do not correspond in any clear way to the three signs (see Laum 1928: 108). Conversely, the three signs for accents certainly existed very soon *after* Aristophanes of Byzantium, for it is during the course of the second century BC that the first surviving papyri with accent marks were produced.[13]

We have very few fragments of Aristophanes of Byzantium relating to accentuation (see Slater 1986: 210). Considerably more survives of the pronouncements on accentuation of Aristophanes' successor as librarian at Alexandria, Aristarchus of Samothrace, who died *c.*144 BC.[14] Within a few generations, sufficiently many grammarians were interested in accentuation for us to have evidence of disagreements among them. For example, a scholion in the *Iliad* manuscript Venetus Marcianus 822 ('A')[15] (quoted further on) tells us that Tyrannio (first century BC) took a different view from that of Aristarchus on the accentuation of the participle *πέφνοντα/πεφνόντα* 'killing'.[16]

1.3.1 Herodian

An important development took place in the second century AD. The highly distinguished grammarian Herodian, who was born at Alexandria but came to Rome and became a Roman citizen (adopting Aelius as a Roman *nomen*), wrote various works on accentuation and related matters, including a very large work called *Περὶ καθολικῆς προσῳδίας* 'On prosody in general'.[17] This work dealt with breathings and vocalic quantities as well as accentuation. It was extremely influential, to the extent that all later grammarians who treated of accentuation depended on Herodian, whether directly or indirectly (so Vendryes 1904: 11).

The work does not survive as such, but there are two short treatises based on it as well as numerous quotations in scholia and later grammarians. The first of these treatises is an epitome of Herodian's work ascribed in some manuscripts to Theodosius of Alexandria, in others to Arcadius.[18] We shall refer to the work as Arcadius' (Arc.), as is often

[13] One of our earliest surviving papyri with accent marks is *P. Oxy.* xv. 1790, a fragment of a poem by Ibycus copied in the 2nd cent. BC (see Turner 1987: 48–9; Probert 2003: 11–12).

[14] See Lehrs (1882: 247–300); Ribbach (1883: 16–34).

[15] Formerly Venetus Marcianus 454 (see Erbse 1969–88: i. p. xiii).

[16] Sch. *Il.* 16. 827 (A) = Tyrannio fr. 42 Haas. For the fragments of Tyrannio on accentuation, with discussion, see Haas (1977, esp. 99–167, 169–72). He is often in disagreement with other grammarians.

[17] On the original length of the *Περὶ καθολικῆς προσῳδίας*, see Egenolff (1887: 5 with n. 1).

[18] On the authorship of this epitome see Nauck (1848: 12 n. 2); Lentz (1867–70: i. pp. cxxx–cxxxv); Egenolff (1887: 6); Galland (1882: 12–16); Cohn (1895: 1154–6). For the suggestion that the author is Aristodemus, see Galland (1882: 14, 16); Kaster (1988: 385). On Arcadius, see Kaster (1988: 244); on Theodosius of Alexandria, Kaster (1988: 366–7).

done in modern works, but there is no certainty as to the real author or authors.

The second short treatise on accentuation, even more compact than Arcadius' but also based on Herodian, is the *Τονικὰ παραγγέλματα* 'Precepts on accents' attributed either to Iohannes Alexandrinus or to Iohannes Philoponus; these were clearly the same person and we shall call him Iohannes Philoponus (although we shall use the standard abbreviation Io. Al.).

Lentz (1867–70) aimed to reconstruct the works of Herodian from the surviving fragments, but his edition contains much that cannot be ascribed to Herodian with any confidence as well as failing to take account of some of the sources for fragments of Herodian that were in principle available to him.[19] We also now have some new fragments from books five to seven of a more complete edition of the *Περὶ καθολικῆς προσῳδίας* surviving in a partly legible condition on a manuscript that was later reused for a Christian text. These fragments were published by Hunger (1967). In addition, *P. Ant.* ii. 67, part of a leaf from a fourth-century AD parchment codex, preserves a fuller summary than Arcadius' of part of book five of the *Περὶ καθολικῆς προσῳδίας*.[20]

Herodian relied very heavily on earlier grammarians trained in the Alexandrian tradition. Most of the information we have on his sources comes from the Herodianic scholia to Homer, especially those transmitted in the *Iliad* manuscript Venetus Marcianus 822 ('A').[21] The grammarian most frequently cited in these scholia is Aristarchus.[22] A host of other grammarians appear also, most of them pupils, or pupils of pupils (etc.), of Aristarchus. Direct pupils adduced include Dionysius Thrax, Demetrius Ixion, and Apollodorus. The grammarians who are most often adduced, other than Aristarchus himself, lived somewhat nearer to Herodian's own time: Tyrannio (early first century BC), Trypho (late first century BC), Ptolemy of Ascalon (early first century AD), and Pamphilus (second half of the first century AD).

On disputed questions of Homeric accentuation Herodian's practice in the vast majority of cases is to agree with Aristarchus against other grammarians, often defending Aristarchus' practice with arguments that are clearly his own rather than Aristarchus'.[23] On occasion,

[19] See Egenolff (1900; 1902; 1903); Dyck (1993); Nifadopoulos (2001: 9–11).

[20] See *P. Ant.*: ii, pp. 50–1 (*editio princeps*, with commentary by Barns); Wouters (1975–6; 1979: 216–24); Kaster (1983: 157 with n. 22); Dyck (1993: 779–80).

[21] On the identification of scholia deriving from Herodian, see Lehrs (1882: 30); Laum (1928: 65–98); Dyck (1993: 783–6).

[22] The Homeric scholia are not the only sources for fragments of Aristarchus. Fragments preserved in the Byzantine etymologica are now accessible in Schironi's edition with commentary (2004).

[23] Numerous examples are mentioned by Ribbach (1883: 16–34), along with some disagreements and ambiguous cases.

Herodian even sacrifices consistency of argumentation in order to defend apparently inconsistent practices of Aristarchus'.[24]

The closing words of the scholion Sch. *Il.* 4. 235a[1] (A) rather strikingly express respect for Aristarchus' opinion as a working principle. After a discussion of the correct accentuation and interpretation of *ψευδεσσι* at *Il.* 4. 235 (*ψευδέσσι*, i.e. dat. pl. of *ψευδής*, or *ψεύδεσσι*, i.e. dat. pl. of *ψεῦδος*), in which Aristarchus' opinion (*ψευδέσσι*) is found to have less to recommend it than that of the later[25] grammarian Hermappias (*ψεύδεσσι*), there follows the comment:

καὶ μᾶλλον π⟨ε⟩ιστέον[26] *Ἀριστάρχῳ ἢ τῷ Ἑρμαππίᾳ, εἰ καὶ δοκεῖ ἀληθεύειν.*

And it is better to believe Aristarchus than Hermappias, even if the latter appears to be right.

Although the main part of the scholion in question derives from Herodian, this closing remark, which almost reads as a parody of Herodian's scholarship, probably does not (see Erbse 1960: 121). It conveys, however, the impression that a medieval commentator gained, understandably enough, from the works of Herodian.

Herodian did not, however, follow Aristarchus entirely slavishly, and there are occasions on which he advocates a different practice from Aristarchus'.[27] It is clear, however, that thanks to the respect in which Herodian held Aristarchus, the system he was instrumental in passing down to us was founded on Aristarchus' practice.

Herodian's precepts on accentuation were by no means confined to the accentuation of Homer. For example, the summaries and extant fragments of the *Περὶ καθολικῆς προσῳδίας* contain numerous statements on how Attic speakers, *οἱ Ἀττικοί* or *οἱ Ἀθηναῖοι*, accented a particular word for which their accentuation differed from that of the Koine.[28] Herodian is also credited with the composition of a work on Attic prosody.[29] He must, therefore, have had access to specific information on the accentuation of Attic. The summaries never mention a source of such information, but the fragments published by Hunger adduce two relevant grammarians. A grammarian called Philemon is cited for information on the Attic accentuation of *περίστῳον* 'peristyle', *προστῷον* 'portico', and *βαῦνος* 'furnace' (Hrd. frr. 52, 53 Hunger). Hunger (1967: 13) takes this grammarian to be the glossographer of that name

[24] See the examples discussed by Erbse (1960: 349–52).

[25] A date later than (or at least contemporary with) Aristarchus is implied by the scholion in question (cf. Gudeman 1912*b*).

[26] Erbse's *π⟨ε⟩στέον* is a typographical error.

[27] See the example discussed by Lehrs (1837: 80–6); Vendryes (1904: 247–8); West (1998–2000: i. pp. xix–xx).

[28] See e.g. Arc. 73. 4–5 on Koine *βαυνός* vs. Attic *βαῦνος* 'furnace'.

[29] See *EM* 804. 20; Sch. Ar. *Eq.* 487a; Velsen (1853: 10).

who lived in Attica around the turn of the third and second centuries BC and wrote a work called *Περὶ Ἀττικῶν ὀνομάτων ἢ γλωσσῶν* (or *Ἀττικὰ ὀνόματα*, *Ἀττικαὶ λέξεις*, or *Ἀττικαὶ φωναί*).[30] Book 1 of Trypho's *Περὶ Ἀττικῆς προσῳδίας* is cited for the Attic accentuation of *βαῦνος* 'furnace' (Hrd. fr. 53 Hunger).[31]

The other grammarians cited in Hunger's fragments confirm the impression given by the Homeric scholia that Herodian's sources were largely grammarians trained in the Alexandrian tradition. A lost work by the Alexandrian Didymus (first century BC), *οἱ μνημάτῑται*, perhaps a collection of model funeral speeches, is cited, though we do not know for what (Hrd. fr. 54 Hunger, with Hunger 1967: 14). Epaphroditus (first century AD) is cited for the word *μανάκις* 'seldom' (Hrd. fr. 55 Hunger). Epaphroditus was born at Chaeronea and after being taken into slavery came to the house of the Alexandrian grammarian Archias, who educated him. He subsequently changed hands and after then being set free came to Rome, where he taught until his death (Cohn 1905: 2711). Grammarians called Heracleon and Aristophanes are cited for the word *θέρμαυστρον* 'portable brazier' (Hrd. fr. 56 Hunger). Hunger (1967: 14) regards the Aristophanes in question as probably Aristophanes of Byzantium (third to second century BC), the Alexandrian who, we are told, invented signs for Greek accents (see above). The name Heracleon is likely to refer to an Egyptian grammarian, probably of the first century BC, who came to Rome (Berndt 1914). He is mentioned also in the Herodianic scholia (e.g. Sch. *Il.* 5. 638c (A)) and is likely to have been trained at Alexandria (Berndt 1914: 5).[32] We can thus see, despite the bias towards Homerica in our surviving sources, that Herodian drew on the same Alexandrian tradition for his treatment of Greek accentuation in general as for his discussions of Homeric accentuation in particular.

1.3.2 Basis of the grammatical tradition (i): words belonging to Hellenistic Koine

Since, as we have seen, the grammatical tradition relating to Greek accentuation had its roots in Hellenistic Alexandria, we need to consider what knowledge the Alexandrian grammarians of this period had regarding the accentuation of ancient Greek, and how they arrived at this knowledge.

[30] On this Philemon see Wendel (1938).

[31] For the other surviving fragments of Trypho's *Περὶ Ἀττικῆς προσῳδίας*, see Velsen (1853: 10–22). For further discussion of Herodian's knowledge of Attic accentuation, see Probert (2004).

[32] It is just possible that the Heracleon referred to in Hunger's fragment is a glossographer from Ephesus also likely to have lived in or near the 1st cent. BC (Gudeman 1912*a*; cf. Hunger 1967: 14). Very little is known for certain about this grammarian.

The Alexandrians spoke a form of Greek, namely educated Hellenistic Koine. Many words of classical and pre-classical Greek were still part of the language in their time; for the position of the accent they could look to their own usage.[33] For this large number of words, the accent prescribed by the Alexandrians was almost always that of their own Koine (cf. Wackernagel 1893: 37–8; 1914*b*: 121–7).

It is a common misconception that the system of ancient Greek accentuation handed down to us was simply invented by Hellenistic grammarians. The Koine spoken by the grammarians was, however, a real language, not an invented one. Its system of accentuation was therefore also that of a real language and ought at the very least to be worth investigating, like the accentuation of any other real language, for what it can contribute to our knowledge about accentuation in the world's languages.

Further indications that the accentuation of ancient Greek as we have it represents that of a genuine language come from comparison of ancient Greek accentuation with that of some other Indo-European languages, especially Vedic Sanskrit. For example, the movement of the accent between the root and the ending in the paradigm of the Greek word for 'foot' is almost exactly matched in the Vedic cognate; thus e.g. Gk *πόδα* (acc. sg.), *ποδός* (gen. sg.); Vedic *pā́dam* (acc. sg.), *padáḥ* (gen. sg.). In the cardinal number series, the accentuation of the numbers from five to ten is exactly paralleled by that of the Vedic cognates: *πέντε*, *ἕξ*, *ἑπτά*, *ὀκτώ*, *(ἐν)νέα*, *δέκα*; Vedic *páñca*, *ṣáṣ-*, *saptá*, *aṣṭá-*, *náva*, *dáśa*.

Such correspondences, not only in the accentuation of individual lexical items but also in the accentual differences between the various members of a system (forms in a paradigm, or successive members of the numeral series), are too striking to be attributable to chance. They demonstrate that for many words the position of the Greek accent has remained the same from late Indo-European until the Hellenistic period. We shall have occasion to return to these considerations as evidence for the archaic character of some aspects of ancient Greek accentuation (p. 83); what concerns us for the present is that such evidence for continuity would not be found if the Hellenistic system were a pure invention.

Looking forward in time, the position of the ancient Greek accent is largely the same as that of modern Greek, although the nature of the accent has changed (see p. 50). For example, ancient Greek *καθαρός* 'pure' and *βάρβαρος* 'non-Greek' are accented on the same syllable as their modern descendants *καθαρός* [kaθa'rɒs] 'clean' and *βάρβαρος*

[33] It is worth comparing Galen's remark, quoted above (p. 19), that the accent of *γαῦσος*/*γαυσός* was uncertain in his time because the word was *not* in current usage.

['vɑrvɑrɒs] 'barbarous'.[34] This continuity with the modern language again confirms the linguistic reality of the Hellenistic accent system.[35]

We may summarize as follows the arguments for regarding the Alexandrian system of accentuation as linguistically real. Firstly, if the grammarians had simply invented the system, it is hard to imagine how or why they would have done so. Secondly, it is unlikely that they not only invented an accent system but then had so great an influence on the pronunciation of Greek that to this day modern Greek is pronounced with accents placed as they prescribed. Thirdly, and most importantly, it is not only unlikely but actually impossible that the Alexandrians invented *ex nihilo* an accent system that just happened to display very striking correspondences with that of Vedic Sanskrit, a language of which they were ignorant.

1.3.3 Basis of the grammatical tradition (ii): words that did not survive into Hellenistic Koine

So far, we have seen that the Alexandrian accentuation system is fundamentally that of a genuine language, namely the Greek spoken in Hellenistic Alexandria. However, the grammarians tell us not only about the accentuation of words that survived into the spoken language of their own times, but also about words known to them only from earlier literature, and words from dialects other than the Koine. We need to consider the basis for this information.

[34] Some changes in the position of the accent have occurred and continue to occur. In particular, because the ancient distinction between long and short vowels has been lost, some old long vowels have begun to be treated in the same way as old short vowels. Thus in ancient Greek no word with the gen. sg. ending *-ου* had the accent further from the end than the penultimate syllable, since a heavy final syllable prevented the accent falling on the antepenultimate (see p. 60). To a large extent, the gen. sg. ending *-ου* retains in modern Greek the property that it does not allow the accent to fall on the antepenultimate, even though the length of the vowel, which provided the condition for this limitation in ancient Greek, has been lost. There is, however, variation on this point in the modern spoken language. Warburton (1970: 111) reports that, for example, *τοῦ δάσκαλου* exists alongside *τοῦ δασκάλου* 'of the teacher'. For detailed (although now a century old) accounts of the changes in position of the accent that have occurred between the Hellenistic period and modern times, see Hatzidakis (1892: 418–40; 1905–7: ii. 23, 82–175).

[35] The modern language has certainly been heavily influenced by the ancient literary language (provided with accents according to the Hellenistic system), and we shall see further on (p. 51) that some post-Hellenistic developments in accentuation were reversed or at least checked in the subsequent history of the language. The sheer *amount* of correspondence between the position of the accent in modern Greek words and that in their ancient counterparts, however, makes it necessary to assume that the modern accentuation system is fundamentally an organic development from the ancient, not simply the result of whole-scale borrowing from the literary language with the grammarians' accents.

In some cases, the grammarians had clearly worked out a general rule for the accentuation of words belonging to a particular morphological category. The accentuation of some categories of ancient Greek word is so predictable that the risk of using this method would have been minimal. Finite verb forms, for example, with very few exceptions have 'recessive' accentuation, i.e. an accent as far from the end of the word as is normally possible in Greek (see pp. 60–2), and thus it is most likely that a finite verb form not previously encountered should also be recessive. The rules for accenting participles and infinitives were also very rigid and admitted very few exceptions. The disagreement between Aristarchus and Tyrannio over the accentuation of the participle *πέφνοντα/πεφνόντα*, reported by the following Homeric scholion, is based on a disagreement as to whether the word is a present or an aorist participle: Aristarchus seems to have assumed, perhaps without really considering the question, that *πεφνοντα* was the accusative of a present participle and should therefore be accented like other present participles with the same termination, e.g. *τέμνοντα* 'cutting'. Tyrannio later produced an argument for regarding the participle as an aorist, of the 'second' (or 'strong') aorist type:[36]

{*ὡς πολέας*} *πέφνοντα· ὡς τέμνοντα. οὕτως καὶ Ἀρίσταρχος. ὁ δὲ Τυραννίων παροξύνει ὡς λαβόντα, δεύτερον ἀόριστον ἐκδεχόμενος. οὕτως δὲ καὶ τὴν εὐθεῖαν ὀξύνει, ''κῆρ ἄχεος μεθέηκα, χερείονά περ καταπεφνών'', τοῦ Ἀριστάρχου βαρύνοντος. καί μοι δοκεῖ ὁ Τυραννίων λόγῳ ὑγιεῖ χρῆσθαι· εἰ γὰρ πέφνω πέφνεις πέφνει οὐ λέγομεν, ὑποτακτικὸς δὲ πέφνω, ''πέφνῃς'', ''πέφνῃ'' καὶ ''πέφνε γὰρ Ὀθρυονῆα'', καὶ ἔστι δεύτερος ἀόριστος ὡς ''ἔλαβε'', λάβω λάβῃς, ''λάβῃ'', δῆλον ὅτι ὀφείλομεν καὶ τὴν μετοχὴν ὀξύνειν. ὁ μέντοι Ἀρίσταρχος καὶ τῷ χαρακτῆρι τῆς φωνῆς ἐπείσθη καὶ οὕτως ἐβάρυνεν· ἐπεὶ γὰρ αἱ εἰς* $\overline{\text{νων}}$ *λήγουσαι μετοχαί, ἔχουσαι πρὸ τοῦ* $\bar{\nu}$ *σύμφωνον κατ' ἐπιπλοκήν, ἤτοι ἐβαρύνοντο ἢ περιεσπῶντο, οὐδέποτε δὲ ὠξύνοντο, ὥσπερ ἔχει ἡ τέμνων κάμνων πίτνων, ἐδοκίμαζε καὶ τὴν πέφνων βαρύνειν, οὐχὶ ὀξύνειν. εἰ δέ τις λέγοι ''διὰ τί γὰρ οὐ περισπᾷς;'', διδαχθήσεται ἐκ τῆς κλίσεως· οὐ γὰρ πεφνοῦντα ἐροῦμεν ἢ πεφνῶντα ὡς νοοῦντα...* (Sch. *Il.* 16. 827 (A) = Tyrannio fr. 42 Haas)

πέφνοντα· [accented] like *τέμνοντα*. This is what Aristarchus says too. But Tyrannio gives the word an acute on the penultimate syllable, like *λαβόντα*, taking it to be a second aorist. And similarly he gives the nominative an acute on the final syllable (as in ''*κῆρ ἄχεος μεθέηκα, χερείονά περ καταπεφνών*''), while Aristarchus makes it *πέφνων*. And Tyrannio seems to me to have a sound argument. For seeing that we don't say *πέφνω, πέφνεις, πέφνει*, but the subjunctive is *πέφνω, πέφνῃς, πέφνῃ*, and [there is] ''*πέφνε γὰρ Ὀθρυονῆα*'', and the word is a second aorist like *ἔλαβε, λάβω, λάβῃς, λάβῃ*, it is clear that we should also give the participle an acute on the final syllable. But Aristarchus also paid attention to

[36] For a different view of this passage, however, see Wackernagel (1914*b*: 106), with discussion by Haas (1977: 151–2).

the word's shape and this is why he accented it non-finally. For since the participles that end in *-νων* and have a consonant before the *ν*, making a cluster, are either accented non-finally or have a circumflex on the final syllable, as in *τέμνων*, *κάμνων*, *πίτνων*, but never an acute on the final syllable, he thought fit to accent *πέφνων* non-finally as well, not to give it a final-syllable acute. And if somebody should say, 'But why does he not give the word a circumflex on the final syllable?' he will be instructed with reference to the word's declension. For we do not say *πεφνοῦντα* or *πεφνῶντα* like *νοοῦντα*.

Most instances of unfamiliar verbal forms will not have presented the same difficulty as *πεφνοντα*: there is usually no doubt about which part of a verb is involved, and only in a few cases (chiefly involving participles, infinitives, and to some extent imperatives) could uncertainty here affect the accentuation given to the word.

For nouns and adjectives the position was rather different. The empirical rules one can extrapolate are less rigid and have more exceptions. Nevertheless, some broad generalizations are possible based on the termination of a word (e.g. whether it ended in *-μος*) and whether it was a noun (and if so whether a common noun or proper name) or adjective. The grammarians seem to have collected lists of words with the same termination and then produced rules for accenting them. Apparent exceptions were accounted for where possible by formulating the rule so that it did not apply to the exceptions; where this was not possible, exceptions simply had to be listed. The following rule from Arcadius' epitome of Herodian's *Περὶ καθολικῆς προσῳδίας* will serve to illustrate the general method:

τὰ εἰς ΜΟΣ ἔχοντα πρὸ τοῦ Μ τὸ Γ ὀξύνεται προσηγορικὰ ὄντα· νυγμός φραγμός τιναγμός ἀλαλαγμός ὑλαγμός διωγμός. σεσημείωται τὸ ὄγμος (ἡ τάξις) βαρυνόμενον, καὶ τὸ Ῥίγμος οὐ προσηγορικόν. (Arc. 65. 17–21)

Words ending in *-μος* that have *γ* before the *μ* have an acute on the final syllable if they are common nouns: *νυγμός* ['pricking'] *φραγμός* ['fence'] *τιναγμός* ['shaking'] *ἀλαλαγμός* ['loud noise'] *ὑλαγμός* ['barking'] *διωγμός* ['pursuit']. Exceptions are *ὄγμος* ('array'), which is accented non-finally, and *Ῥίγμος*, which is not a common noun.

Proper names such as *Ῥίγμος* do not count as exceptions to this rule, since it is only stated to apply to common nouns. The common noun *ὄγμος*, on the other hand, is an exception that simply has to be listed. If a grammarian came across a common noun in *-γμος* that did not belong to the spoken language of his day, it would be impossible for him to know for certain whether the word was accented on the final syllable like *νυγμός* ('pricking') or recessive like *ὄγμος* ('array'), but a rule such as Herodian's could tell him that accentuation on the final syllable was the better guess, since this was the accentuation of the majority of common nouns in *-γμος*, even if not of all of them.

1.3.4 Basis of the grammatical tradition (iii): words for which Hellenistic Koine had a variant form

So far we have discussed words that were still part of the living language used by the grammarians, and words that were no longer part of that living language. However, there are also words that one might place in a category between these two, namely those for which recognizably the same word existed in speech at the time of the grammarians, but in a somewhat different form. For example, the word *τριττός* 'threefold' found in Attic authors bears a clear formal similarity to the Koine word *τρισσός* with the same meaning.

The Hellenistic grammarians developed a theory of *πάθη*, or 'changes', that could account for differences between archaic and contemporary forms of a word, or between variants appearing in different dialects.[37] These *πάθη* were also called upon to explain the supposed developments from one word (or phrase) to another in ancient etymologies. They include the addition or removal of a letter or syllable;[38] the shortening or lengthening of a vowel;[39] the contraction of two vowels into one or splitting of one vowel into two.[40]

It is sometimes stated that the ancient science of etymology was almost completely unconstrained.[41] However, there were in fact some

[37] I use the word 'change' here to cover on the one hand the diachronic changes that affect words during the course of their history (e.g. OE *ān* lost its *n* before a consonant) and on the other the 'changes' effected by synchronic rules of the language such as, in English, '*a* changes to *an* before a vowel'. To posit changes of the latter type requires a particular, rule-based, view of the synchronic organization of language, current both in the Graeco-Roman grammatical tradition and again in much modern theoretical linguistics. It has often been said that the 'changes' that words undergo in ancient etymologies are to be understood in a synchronic, not a diachronic, sense (see e.g. Lallot 1991: 143; Matthews 1994: 25; Nifadopoulos 2001: 108). The distinction between synchrony and diachrony was not, however, made at all explicitly in ancient grammar, and despite the real achievements of the ancient grammarians at synchronic linguistic analysis I do not believe that an ancient grammarian who was asked whether his 'changes' were meant in a synchronic or a diachronic sense would have understood such a question. For this reason, I prefer to speak vaguely of 'changes' when discussing ancient grammatical theory. I owe several of my opinions on this subject to discussions with Richard Ashby and to some unpublished work of his on ancient grammarians' attitudes to different varieties of Greek.

[38] For example, *ἐ-* is removed from *ἐθέλω* to give *θέλω*: Apollonius Dyscolus, *Pron.* 58. 28, *Adv.* 147. 14, 158. 16.

[39] Doric *τουτῶ* and *αὐτῶ* are said to be created from *τουτόθεν* and *αὐτόθεν* by removal of the final syllable and then lengthening of the *-o-* to *-ω-*: Apollonius Dyscolus, *Adv.* 190. 17–20, 207. 27–208. 2.

[40] e.g. *δὴ αὖτε* contracts to *δηῦτε*: Trypho in Apollonius Dyscolus, *Conj.* 228. 18 (= Trypho fr. 46 Velsen); the final vowel of *εὐσεβῶς* is divided into two to give *εὐσεβέως*: Apollonius Dyscolus, *Adv.* 170. 20. On the various types of *πάθη*, with particular reference to their classification by Herodian, see Nifadopoulos (2001: 128–73).

[41] Cf. Lallot (1991: 138), on Alexandrian etymology: 'liberté phonétique pratiquement illimitée, contrôle sémantique peu exigeant, recevabilité de l'étymologie plurielle.'

principles constraining the operation of *πάθη*, and therefore constraining possible etymologies (see Wackernagel 1876). The principle that will concern us here may be stated as follows (cf. Wackernagel 1876: 15–16): the operation of a *πάθος* on a word leaves the accentuation of the word unchanged, unless this would cause violation of a general accentual law (e.g. the law of limitation: see p. 60), or a specific law applying to the particular class of word involved. The principle is never stated at the level of generality we have given it (though cf. *Et. Gud.* 238. 37–41, quoted below), but it seems to have lain behind more restricted statements such as the following:

ἐκεῖνό τε σαφέστατόν ἐστιν, ὡς τὰ ἀφαιρεθέντα συμφώνου ἢ καὶ προσλαβόντα σύμφωνον τύπου μὴ ἀντικειμένου ὁμότονά ἐστιν. οὔτε οὖν ὁ δή ἦ ἐγένετο, οὔτε κατὰ πρόσθεσιν τοῦ δ ὁ ἦ δή, καθὸ ὁ μὲν περισπᾶται, ὁ δὲ ὀξύνεται. (Apollonius Dyscolus, *Conj.* 256. 29–257. 1)

And the following is most clear: that words that have lost a consonant or acquired a consonant have the same accentuation, unless a general rule opposes this. Therefore δή did not become ἦ, nor did ἦ become δή by the addition of the δ. For the one has a circumflex, the other an acute.

Apollonius Dyscolus here uses our principle to attack a proposed etymology, one linking the particles ἦ and δή. A discussion of the word *ἠθεῖος* 'trusty' in the *Etymologicum Gudianum*[42] strongly implies that etymologies are generally better if they do not involve a change of accent than if they do. Two alternative etymologies are discussed, one starting from *θεῖος* 'divine', and the other deriving *ἠθεῖος* from *ἔθος* 'custom, habit' via the hypothetical adjective *ἔθειος*. The former etymology is said to be 'more according to rule' because it does not involve a change in accent, and because it involves fewer changes:

ἀναλογώτερον δέ ἐστιν ἐκ τοῦ θεῖος αὐτὸ κανονίζειν, ἤπερ ἐκ τοῦ ἔθος. ἐκ γὰρ τοῦ θεῖος καὶ ὁ [sic] αὐτὴ τάσις σώζεται, καὶ ὀλίγα πάθη δίδοται. ἐκ δὲ τοῦ ἔθος, καὶ ἀλλοτριὸς [sic] ὁ τόνος, καὶ πολλὰ τὰ πάθη δίδοται. (*Et. Gud.* 238. 37–41)

But it's more according to rule to derive it from *θεῖος* than from *ἔθος*. For in the derivation from *θεῖος* the same accent is kept and only a few changes are given; but in the derivation from *ἔθος* the accent is different and many changes are given.[43]

[42] Cf. *EM* 422. 21–6; Orion 68. 18–20. Lentz (1867–70: ii. 171) takes the doctrine to derive from Herodian.

[43] The same principle is implicit e.g. in the discussion of *πούς* 'foot' at *EM* 686. 4–20, where the development of *πούς* from hypothetical *πορός* 'one who crosses' via hypothetical *ποός* is assumed to be possible only because *πορός* is accented on the final syllable, causing the accent of *πούς* to be on the last mora. (An alternative derivation from *πόρος* 'place crossed' is considered possible, but syncope of the accented vowel of *πόρος* is a crucial step: *πόρος* → *πρός* → *πός* → *πούς*.)

We may note that the grammarians' principle is entirely in keeping with modern observations: in general, a phonological or morphological change operating in a language does not allow a different accent to be randomly assigned to the result.[44] To take a trivial example, ancient Greek word-final *-n* has in most contexts been lost in standard modern Greek (see Horrocks 1997: 206), but the accentuation of the relevant words remains systematically unaltered by the change. On the other hand, many ancient Greek words that ended in *-íᾱ* have undergone a systematic change to standard modern Greek *-ιά*: the *-ι-* has become consonantal and the accent has shifted systematically onto the final syllable.[45] That is to say, modern expectations, like ancient ones, are that an alteration in the position of the accent may indeed arise when a word changes in some other respect, but if so the alteration in accent follows a predictable pattern: phonological and morphological changes do not simply open a door to haphazard changes in accentuation.

As well as being invoked to support or discredit an argument for the development of one form from another, our principle could also be applied in cases where the development of one form from another seemed perfectly obvious, but where the position of the accent was known for only one word of the pair, the one belonging to Hellenistic Koine. This idea is hinted at in the following passage and may well be the source of Herodian's information on the accent of *κιττός* 'ivy' and *τριττός* 'threefold', Attic forms corresponding to the Koine forms *κισσός* and *τρισσός*:

τὰ ἐις διπλοῦν TT βαρύνεται, χωρὶς τῶν Ἀττικῶν· κόττος ῥύττος κάττος. τὰ δὲ Ἀττικὰ ὁμοτονεῖ τοῖς κοινοῖς, ἐξ ὧν γέγονε· κιττός ὅτι κισσός, τριττός ὅτι τρισσός. (Arc. 92. 4–7)

Words [ending in *-τος*] that have double *-ττ-* have a non-final accent, apart from those that belong [specifically] to Attic. So *κόττος ῥύττος κάττος*. But those belonging to Attic have the same accent as those Koine words from which they come: *κιττός* like *κισσός*, *τριττός* like *τρισσός*.

At this point, however, we must recognize a problem. We cannot be sure that Herodian did not have other sources of information for the accentuation of *κιττός* and *τριττός* than the application of the principle under discussion. The local Attic dialect persisted for a time in Attica after the Attic-based Koine had come (gradually) to be the official language of most of the Greek-speaking world (see Horrocks 1997: 35–6, 42), and it is likely that the Hellenistic grammarians Philemon and Trypho, who were sources for Herodian's information on Attic

[44] This is true both for a diachronic change and for the change effected by a synchronic rule; cf. n. 37 above.

[45] For a detailed discussion of this change and possible ancient precursors, see Scheller (1951).

accentuation (see pp. 24–5), had access to speakers of local Attic.[46] On the other hand, one possible source of information on the accentuation of a word that had a variant in Hellenistic Koine was the accentuation of the variant. This possibility must be borne in mind when we consider how the grammarians arrived at an accent in difficult cases.

To summarize the argument so far, the grammarians from whom our tradition of ancient Greek accentuation derives were sometimes dealing with words familiar to them from their own speech, sometimes with unfamiliar words. In the case of the familiar words, they had only to use their own knowledge of their native language to know where to write the accent. In the case of unfamiliar words, the situation was different, but not hopeless. Many words belonged to morphological categories whose accentuation was predictable to a greater or lesser degree. Others had a variant form in the language spoken by the grammarians, whose accentuation could be used to determine the accentuation of the unfamiliar word. It also does not stretch the imagination to suppose that the Alexandrian grammarians had first-hand information about the pronunciation of some contemporary dialects other than their own. On the other hand, it has been envisaged that they had a further source for the accentuation of words known from literature, or at least from some poetic literary genres, and we now turn to this question.

1.3.5 Basis of the grammatical tradition (iv): was the accentuation of archaic words known from a continuous oral tradition?

It has been argued that the Alexandrian grammarians derived at least some of their information on the accentuation of archaic words occurring in poetry from a living tradition of pronouncing the poetry in question. The argument in favour of this view is that there are words that were no longer part of the living language in the Hellenistic period and for which the accentuation given by the grammarians does not seem to be the one we would expect them to have deduced from the accentuation of Koine words. In addition, there were words that did exist in Hellenistic Koine and for which the grammarians tell us that the Koine had one accentuation whereas Homer had another. West (1981: 114) states the argument most explicitly as follows:

> The Alexandrian scholars and the grammatical tradition that derived from them attached importance to the study of Homeric accentuation, and record a number of particular accentuations that cannot have been established either from the living Greek language or from theory and analogy, but must have been preserved by a continuous tradition of oral performance from early times: . . .

[46] Philemon in particular is known to have lived in Attica; cf. Probert (2004: 289–90).

This view goes back to Lehrs, was taken up by Steinthal, and has been vigorously defended by Wackernagel and more recently by West and Nagy.[47]

West (1981: 114 with n. 13) makes two observations showing that in the Hellenistic period there was a living performance tradition for Homer and other poetry. Firstly, he notes that there are inscriptions bearing witness to competitive performance of Homer in the Hellenistic period and later.[48] Secondly, he observes that the scholia to Euripides' *Orestes* include a number of comments, perhaps by the Alexandrian scholar Callistratus, on the practice of contemporary actors.[49] The scholia to the *Orestes* thus show not only that there were performances of fifth-century BC dramatic works in the Hellenistic period but also that Alexandrian scholars attended them and regarded them as at least relevant for their own work. Performances of Homer, then, existed in the Hellenistic period, and there was at least the potential for scholars to relate what they had heard at performances to their own work of establishing an authentic text and explaining obscurities. However, Lehrs's claim is not only that there were live performances of Homer and that the grammarians drew on these for information as regards Homeric accentuation, but also that these performances preserved archaisms of accentuation that reached back further than one could have reached by any other means, archaisms for which the living language provided no support and for which the only support was therefore a continuous oral tradition.

Wilamowitz (1916: 9) dismissed Lehrs's claim as entirely fantastic. However, performance traditions maintained by guilds or closed societies sometimes preserve traditional pronunciations and performance techniques over long periods of time. In India, the tradition of Vedic recitation perhaps affords our closest indication of the possibilities for preserving an archaic accentuation system. The Vedic hymns were composed and transmitted orally during a period when the Sanskrit language was undergoing many changes. In the form in which they come down to us, they preserve archaisms of language and, importantly, of accentuation that had been lost from the language by the time they

[47] Lehrs (1833: 269–71; 1837: 175); Steinthal (1863: 459–60); Wackernagel (1893: 33–8; 1943: 181–2; 1914*b*: 97–121); West (1981; 1986, esp. 45–6); Nagy (1970: 120–2; 1996: 125–32). See also Scheller (1951: 9–10).

[48] e.g. *SIG*^{3} 711 L 31, 958. 35–6, 959. 9; *IG* vii. 1773. 17–18, 1776. 15–16. None of these inscriptions specifically mentions Homer, but all mention rhapsodes or rhapsodic performance. Since rhapsodes were particularly performers of Homer—although not to the exclusion of other poets (see West 1970*c*)—it is more than likely that at least some of the rhapsodic performances referred to in these inscriptions involved recitation of Homer.

[49] Sch. Eur. *Or.* 57, 268, 643.

were eventually committed to writing.[50] The metres of the Vedic hymns do not depend on accentuation any more than does the metre of Homer, and therefore the transmission of accents is not supported by the metre, yet an archaic accentuation was preserved within an oral tradition. Ancient Indian sources preserve some hints as to the means by which knowledge of the hymns' archaic pronunciation was reinforced over the centuries. In particular, hand movements are prescribed for use in the recitation of Vedic hymns; they correlate with various features of the sound of the words being recited, including accents (see W. S. Allen 1953: 91).[51]

We do not know what, if any, devices were used in Greece to reinforce traditional knowledge about the accentuation of Homer. We do know, however, that there existed in Greece a guild of some sort, the Homeridae, devoted to the recitation of Homer and regarded as authorities on Homeric matters.[52] They are first mentioned by the sixth-century BC author Acusilaus of Argos,[53] and their existence continues to be implied by references in authors of the fifth and fourth centuries.[54] Later references to the Homeridae do not imply with any certainty that they are still in existence, but they may well have survived into the Hellenistic period, during and after which various other guilds or schools devoted to poetic recitation or other sorts of performance are attested.[55] In addition, it is likely that the Homeridae were a source for the extant 'Lives of Homer', which are Hellenistic or Roman in date.[56]

The Homeridae, or similar groups, offer a possible context for the preservation of recondite knowledge, not necessarily all genuinely very ancient but quite possibly containing some gems of real antiquity. More cannot be said, but if there is even one possible context for the

[50] The earliest written Indic documents to survive, the edicts of Aśoka, date to the 3rd cent. BC. Opinions differ as to how long before this date Indic writing existed, but it is almost certain that writing was not used in the transmission of the Vedas until a late stage in the Vedic tradition; see Max Müller (1860: 497–524); Wackernagel (1896*b*: pp. lvi–lix); Macdonell (1910: 3). For a detailed and up-to-date treatment of the whole question of writing in ancient India see Falk (1993).

[51] Staal (1983: i. 174, ii. 359–75) reports that the Nambudiri brahmins of south-west India, who claim to have preserved a continuous oral tradition of Vedic recitation from Vedic times until the present, use head and hand movements in the teaching of Vedic accents.

[52] On the Homeridae, see T. W. Allen (1924: 42–50). On the name 'Homeridae' (and on 'Homer'), see West (1997: 622–3).

[53] See T. W. Allen (1924: 42 with n. 2).

[54] See Pindar, *N.* 2. 1; Plato, *Ion* 530d, *Phdr.* 252b, *R.* 599e; Isocrates 10. 65.

[55] See T. W. Allen (1924: 48–9); Pasquali (1913: 89–91). Latacz (1998*a*) simply asserts the existence of Homeridae in the Hellenistic period; slightly more cautiously Schmid and Stählin (1929: 87 n. 6). These assertions are based ultimately on rather tentative arguments of Pasquali (1913: 88–92).

[56] See West (1970*b*); Latacz (1998*b*: 686–7, with further bibliography).

preservation of some genuine knowledge of Homeric accentuation then Lehrs's hypothesis cannot be dismissed on *a priori* grounds; one must look at the concrete evidence on the question.

The argument for the existence of archaisms preserved by an oral tradition rests on there being traditional accentuations that cannot be explained in any other way. There is no *direct* evidence for the theory: the grammarians do not refer to the practice of rhapsodes or other performers in order to support the accents they prescribe. Even if they did, we would not know the basis for the performers' practice.

In order to be certain that a given accent cannot have been derived 'either from the living Greek language or from theory and analogy', we need to be fully confident of knowing what forms did and did not belong to the living language and of understanding the theories of the grammarians and the analogical processes by which either a Homeric rhapsode or a grammarian might assign an accent. We cannot, of course, now be fully confident on any of these matters, but I hope that the preceding sections have given at least some insight into the theories and practice of the grammarians, and this insight should be of help to us in the following discussion.

Lehrs's theory is strictly non-falsifiable: it is admitted that not *all* accentuations assigned by the grammarians are archaisms preserved by a living tradition, and the theory cannot, therefore, be disproved by the finding of counter-examples—of words whose accentuation can be shown not to be archaic.[57] The nature of the theory requires that it not be invoked to explain a given instance until all other plausible lines of explanation have been investigated and found to lead nowhere—not because the theory is inherently implausible but because the only evidence for it is the failure of all other lines of explanation in certain cases.

We shall not examine in detail here all the data that have been adduced in support of Lehrs's theory, but shall look at two small groups of words taken from these data. The following discussion is intended to illustrate both the attractions of the theory and its potential pitfalls.

1.3.5.1 ἀλεωρή 'escape', ἐλπωρή 'hope', and θαλπωρή 'warming'

Wackernagel (1943: 181–2) argues that the final-syllable accentuation prescribed by the grammarians for these three Homeric words is archaic and could only be known to the grammarians from a continuous tradition. The argument runs as follows. The words in question originally had the suffix *-ωλή* present in e.g. *εὐχωλή* 'prayer', but the *-l-* of the

[57] Wackernagel allowed that the oral tradition included modernizations as well as archaisms in the field of accentuation, no less—but in his view also no more—than in other areas of language (1893: 35; 1914*b*: 121–7). He also allowed that the most influential grammarians, Aristarchus and Herodian, did not always follow the oral tradition but sometimes introduced 'errors' through theories of their own (1893: 36–7).

suffix underwent dissimilation to *-r-* following a root containing *-l-* (see Chantraine 1933: 243; Schwyzer 1953: 258).[58] The word *πληθώρᾱ* 'fullness', which survived into the Koine (with expected Attic *ᾱ* rather than Ionic *η*), received an accent on the penultimate syllable. Wackernagel suggests that this accent was assigned by analogy with rhyming words such as *ὀπώρᾱ* 'autumn', where the sequence *-ωρᾱ-* has a different source (see Frisk 1960–72: ii. 408). According to Wackernagel, it is not clear how the grammarians could have known the accentuation of the Homeric words *ἀλεωρή* 'escape', *ἐλπωρή* 'hope', and *θαλπωρή* 'warming', and we might expect the words to have been assigned a penultimate-syllable accent like that of *πληθώρᾱ* 'fullness'. He suggests that the explanation for the otherwise puzzling final-syllable accentuation of *ἀλεωρή*, *ἐλπωρή*, and *θαλπωρή* is that the grammarians were served by an oral tradition that had preserved these archaic accentuations.

Wackernagel finds confirmation of this hypothesis in the fact that the word *ἀλεωρή*, which survives into Ionic prose writers such as Herodotus and the Hippocratic corpus and then appears in the prose of Attic and the Koine from Aristotle onward, appears in the manuscripts of the Attic or Koine prose authors in two forms, the finally accented form *ἀλεωρή* and a form *ἀλεώρα* with Attic vocalism and accentuation on the penultimate syllable.[59] He regards the form *ἀλεωρή* as due to Homeric and possibly Herodotean influence and *ἀλεώρᾱ* as the genuine Koine form.

Wackernagel's argument requires the assumption that the grammarians could not have regarded the forms in *-ωρή* (*ἀλεωρή*, *ἐλπωρή*, and *θαλπωρή*) as comparable to words in *-ωλή* such as *εὐχωλή* 'prayer'. But this assumption is false, as is demonstrated by the following exegetical scholion to Homer:

εὐχωλῆς· ὥσπερ παρὰ τὰ παύσω παυσωλή καὶ ἔλπω ἐλπωρή, οὕτω παρὰ τὰ εὔχω εὐχωλή . . . (Sch. *Il.* 1. 65c (b(BC)T))

εὐχωλῆς: Just as from *παύσω* ['I shall stop'] there is *παυσωλή* ['rest'] and from *ἔλπω* ['I cause to hope'] there is *ἐλπωρή* ['hope'], so from *εὔχω* [hypothetical active to middle *εὔχομαι* 'I pray'] there is *εὐχωλή* ['prayer'] . . .

Given that at least one grammarian did see a connection between one of our three words in *-ωρή* and similar words in *-ωλή*, the final-syllable

[58] Chantraine (1933: 243; 1968–80: 58 s.v. *ἀλέομαι*) allows that one cannot exclude the possibility of an original suffix with *-r-*. This seems the less likely hypothesis (as indeed Chantraine implies) since it would not explain the appearance of *-l-* in all the roots that take *-ωρη*. Schwyzer (1953: 258) and Leumann (1953: 223 n. 2) note further examples of possible dissimilation of *l* to *r* (and vice versa) from Greek of various periods.

[59] The practice of printed editions, and in particular the textual variants Louis records for Aristotle, *HA* 488^{b}10–11, 613^{b}11; *PA* 679^{b}28, suggest that penultimate-syllable accentuation was indeed reserved for the form with Attic *-ᾱ* but that *ἀλεωρᾰ́* is also found.

accent assigned to the *-ωρή* forms *could* be an inference on the basis of that of the *-ωλή* forms (some of which survived into the Koine). Wackernagel (1943: 181) makes effectively the same inference when he claims that the final-syllable accentuation of *-ωρή* is original. The ancient grammarians had the insight necessary to anticipate him here and we cannot assume that they did not do so.

Moreover, the assumption that our three words in *-ωρή* were no longer part of the living language in the Koine period may not be accurate. By Wackernagel's admission, some form of the word *ἀλεωρή* survived into post-classical prose. Given that the word seems to have come into Attic and the Koine from Ionic (Wackernagel 1943: 182), it is not inconceivable that the Ionic form *ἀλεωρή* remained in use in the Koine alongside an Atticized version *ἀλεώρᾱ*, the latter being accented on the penultimate syllable under the influence of *πληθώρᾱ* and other rhyming words.

Arcadius' epitome of Herodian explicitly prescribes accentuation on the final syllable for the forms with Attic vocalism *θαλπωρᾱ́* and *ἐλπωρᾱ́* (the quality of the final vowel being guaranteed by the context):

τὰ εἰς PA *ἁπλᾶ μονογενῆ τρισύλλαβα παραληγόμενα τῷ Ω ἀπὸ φύσει μακρᾶς ἢ βραχείας ἀρχόμενα βαρύνεται· Φαλώρα πληθώρα ληθώρα. εἰ δὲ ἀπὸ θέσει μακρᾶς, ὀξύνεται· θαλπωρά ἐλπωρά.* (Arc. 116. 1–4)

Non-compound words of one gender having three syllables and ending in *-ρα*, with *-ω-* in the penultimate syllable, and beginning with a syllable that is long by nature [i.e. containing a long vowel] or short [i.e. an open syllable containing a short vowel], have a non-final accent: *Φαλώρᾱ πληθώρᾱ ληθώρᾱ*. But if they begin with a syllable long by position [i.e. (here) a closed syllable containing a short vowel], they have an acute on the final syllable: *θαλπωρά ἐλπωρά*.

Whatever this statement is based on, it is unlikely to be exclusively knowledge of Homeric accentuation, for then we would expect the Ionic forms *θαλπωρή* and *ἐλπωρή*. It is at least possible that an Attic form *θαλπωρᾱ́* survived into post-classical Greek.

We may conclude, then, that the grammarians could well have arrived at the accentuation of *ἀλεωρή*, *ἐλπωρή*, and *θαλπωρή* either from the living language or on the basis of similar forms; similar forms included for them words in *-ωλή*. We cannot rule out the possibility that their knowledge came exclusively from a continuous oral tradition of pronouncing Homer, but it is difficult to use these forms as evidence for such a hypothesis.

1.3.5.2 δηϊοτής and ἀνδροτής

Lehrs (1882: 257–8) observes that Homer has six nouns in *-οτης*: *φιλότης* 'friendship', *νεότης* 'youth', *κακότης* 'badness', *ἰότης* 'desire', *δηϊοτής* 'battle-strife', and *ἀνδροτής* 'manliness' (the last with a variant

reading *ἁδροτής* 'vigour'). A Homeric scholion deriving from Herodian informs us that the final-syllable accentuation of *δηϊοτής* is due to Aristarchus:

< δηϊοτῆτι· > οὕτως ὁ Ἀρίσταρχος προπερισπᾷ δηϊοτῆτι, ὡς ἀπὸ ὀξυτόνου εὐθείας . . . (Sch. *Il.* 3. 20 (A^{int}))

Δηϊοτῆτι: Aristarchus gives the word a circumflex on the penultimate syllable like this: *δηϊοτῆτι*, as coming from a nominative with an acute on the final syllable.

We have no surviving ancient statements regarding the accentuation of *ἀνδροτής* or *ἁδροτής*, other than a textually uncertain passage of Arcadius merely listing *ἁδροτής* (with *ταχυτής* and *βραδυτής*) as an exception to the rule that polysyllabic feminine nouns in *-της* have a non-final accent (Arc. 30. 3), and similar inclusion of *ἀνδροτής* in a list of finally accented words in the *Etymologicum Magnum* (103. 3) and by Choeroboscus (Th. 1. 326. 11). It is likely, however, that the final-syllable accent of *ἀνδροτής*/*ἁδροτής*, like that of *δηϊοτής*, was prescribed by Aristarchus (cf. Lehrs 1882: 258).

Words in *-οτης* became very productive from the fifth century BC, when the rise of abstract philosophical argument created a vast demand for abstract nouns. These *-οτης* words of the classical period all had a penultimate acute in the nominative, except, we are told, that the Athenians said *κουφοτής* 'lightness' instead of the Koine form *κουφότης* (see Arc. 30. 4). So why, asks Lehrs, did Aristarchus assign final-syllable accentuation to *δηϊοτής* and *ἀνδροτής* (or *ἁδροτής*)? Lehrs's answer is that this was an ancient accent that had been handed down in a continuous tradition of pronouncing Homer.

Given the paucity of discussion of *ἀνδροτής* or *ἁδροτής* in the ancient sources, in what follows we shall consider ancient discussions only of *δηϊοτής*. We shall, however, return further on to some modern observations on the word *ἀνδροτής*/*ἁδροτής* and its accent.

Although we know that Aristarchus prescribed final-syllable accentuation for *δηϊοτής*, we have no information as to how he arrived at this accent. Ancient sources suggest, however, that Herodian discussed the word's accentuation at some length. The Homeric scholiast quoted above continues as follows:

. . . τὸ δὲ κεφάλαιον ἐκτέταται ἐν τῇ Ἰλιακῇ προσῳδίᾳ. (Sch. *Il.* 3. 20 (A^{int}))

The main argument has been laid out in the *Ἰλιακὴ προσῳδία*.

The reference to a *κεφάλαιον*, a main argument or summary, suggests that Herodian treated the accentuation of *δηϊοτής* in some detail, not just in a passing reference. A similar impression is given by Eustathius, who refers to a discussion of Herodian's *ἐν τῷ Περὶ ταχυτῆτος καὶ δηϊοτῆτος* 'in

the *On ταχυτής and δηϊοτής*', or 'In Herodian's discussion of *ταχυτής* and *δηϊοτής*':

σημείωσαι δὲ ὅτι τινὰ τῶν παλαιῶν ἀντιγράφων Τροίζηνα προπαροξυτόνως ἔγραψαν, οἷς καὶ Ἡρωδιανὸς συνηγορεῖ ἐν τῷ Περὶ ταχυτῆτος καὶ δηϊοτῆτος εἰπών, ὡς ἡ Δωρὶς καὶ Αἰολὶς διάλεκτος οὐδέποτε κατὰ γενικὴν περιττοσύλλαβον τὸ ῆτα μετατιθέασιν εἰς ἄλφα, εἰ μὴ βαρύνοιτο· Ἕλλην Ἕλλαν, Τροίζην Τροίζαν· ποιμήν δὲ καὶ λιμήν οὐκ ἂν ἐροῦσι διὰ τοῦ ἄλφα, ἐπεὶ ὀξυτονεῖται· ἐπὶ μέντοι μονοσυλλάβων μετατιθέασι τὸ σφήξ καὶ μήν, σφὰξ λέγοντες καὶ μάν. σεσημείωται, φησί, τὸ ἐσθάς ὀξυνόμενον καὶ διὰ τοῦ ᾱ λεγόμενον παρὰ Πινδάρῳ ἐν Πυθιονίκαις. (Eust. 287. 18–24)

Note that some of the ancient copies have written *Τροίζηνα* with an acute on the antepenultimate syllable. And Herodian agrees with them, saying in the 'On *ταχυτής* and *δηϊοτής*' that the Doric and Aeolic dialects never change eta to alpha in words whose genitive has a syllable more than the nominative, unless those words have a non-final accent. *Ἕλλην* becomes *Ἕλλᾱν*, *Τροίζην* becomes *Τροίζᾱν*. But they wouldn't say *ποιμήν* and *λιμήν* with an alpha, since those words have an acute on the final syllable. In monosyllables, however, they do make the change, as in *σφήξ* and *μήν*, which they pronounce *σφᾶξ* and *μᾶν*. The word *ἐσθᾶς*, he says, is an exception, having an acute on the final syllable and being spoken with alpha in Pindar's *Pythians*.

If we can assume (as seems likely) that the discussion of the accentuation of *δηϊοτής* to which the scholiast alludes is the same as that which Eustathius mentions, we would have in Eustathius a reference to a discussion occurring in the *Περὶ Ἰλιακῆς προσῳδίας*. To warrant being referred to simply as 'Herodian's discussion of *ταχυτής* and *δηϊοτής*', with no mention of the title of the larger work intended, the discussion was probably relatively extensive.[60] The impression given by Eustathius here thus agrees with the reference to a *κεφάλαιον* quoted above.

If we are right in equating the discussion of Herodian's to which the scholion on *Iliad* 3. 20 refers and that which Eustathius mentions,

[60] The formula '*ἐν τῷ Περί* (+genitive)' is most often used to refer to the title of a work. However, there are also instances where it is clearly used to indicate a chapter or section of a larger work. For the instance in question it is worth comparing the formula used twice in the Homeric scholia to refer to a single entry (i.e. the entry on a single line or few consecutive lines of Homer) in a series of Homeric *epimerismi*: *. . . οὕτως Ἡρωδιανὸς ἐν Ἐπιμερισμῷ τῷ* ''*οὐ <φυτόν, ——— /> οὐκ ὄγχνη, οὐ πρασιή τοι*'' (Sch. *Il.* 19. 267a (T)) 'So says Herodian in the *epimerismus* on the lines *οὐ φυτόν, . . . οὐκ ὄγχνη, οὐ πρασιή τοι*'; likewise *ἐν δὲ ἐπιμερισμῷ τοῦ, μῆνιν ἄειδε θεά, Πηνελόπην αὐτήν φησι λελέχθαι, παρὰ τὸ πένεσθαι τὸ λῶπος* (Sch. *Od.* 4. 797 (HPQ)) 'But in the *epimerismus* on the line *μῆνιν ἄειδε θεᾶ*, . . . he [perh. Didymus; on the text see Dindorf ad loc.] says that she is called *Penelope* because of the fact that she *works at* (*πένεσθαι*) the robe'. What is of interest is that these scholia do not refer merely to Herodian or Didymus 'in the *epimerismi*' but pinpoint the specific entry in question. Eustathius' mention of Herodian *ἐν τῷ Περὶ ταχυτῆτος καὶ δηϊοτῆτος* is clearly not a reference to an *epimerismus*, but it may well refer to a fairly long discussion of a specific rule arising in the *Περὶ Ἰλιακῆς προσῳδίας*. On these examples, and another from the scholia to Aristophanes, see Lentz (1867–70: i. pp. xix–xx).

the discussion reported by Eustathius concerning the pronunciation of various words with eta or alpha in Doric and Aeolic must in some way be relevant to the accentuation of *δηϊοτής* (and of *ταχυτής*, another word of surprising accentuation to which we shall return). The obvious suggestion is that, having established the law reported by Eustathius, Herodian used it to *deduce* the accent of *δηϊοτης* from the Doric and Aeolic pronunciation of the word. Now we know that the Aeolic and Doric pronunciation should in fact have been *δηϊοτᾱς*,[61] and therefore Herodian's rule ought to prescribe the accentuation **δηϊότης*. A further passage in which Eustathius appears to refer to the same discussion of Herodian's seems to confirm that Herodian argued for an accent on the penultimate syllable:

ἀλλαχοῦ δὲ ὁ αὐτὸς κανονίζων πιθανῶς τὸν τόνον τῆς ταχυτῆτος καὶ τῆς δηϊοτῆτος λέγει, ὅτι τὰ εἰς ᾱ̄ λήγοντα μετὰ μακρᾶς, ἡνίκα ὀξύνονται, τὴν παραλήγουσαν ἔχει ἐκτεινομένην· κνημίς· ψηφίς· γλωχίς· αἰδώς· ἠώς. διὸ καὶ ἡ ἕως βαρυτονηθεῖσα συνέστειλε τὴν παραλήγουσαν. οὔκουν[62] *καὶ ἡ ταχύτης, φησί, καὶ ἡ δηϊότης,*[63] *εἰ ὠξύνοντο, βραχυπαραληκτεῖν εἶχον ἄν.* (Eust. 26. 40–6)

And elsewhere the same scholar [sc. Herodian], persuasively formulating a rule for the accentuation of *ταχυτης* and *δηϊοτης*, says that words ending in *-ς* after a long vowel have the vowel of the penultimate syllable long when they have an acute on the final syllable: *κνημί́ς*, *ψηφί́ς*, *γλωχί́ς*, *αἰδώς*, *ἠώς*. That is also why *ἕ́ως*, which has a non-final accent, has the vowel of the penultimate short. Therefore, he says, *ταχύτης* and *δηϊότης* also could not have had a short vowel in the penultimate syllable if they had an acute on the final syllable.

However, there is a consensus of opinion that Eustathius has misunderstood Herodian in these passages, perhaps as a result of the form in which Herodian's doctrine came down to him.[64] There are two main reasons for this view. Firstly, the word *ταχυτής*, which Eustathius tells us Herodian discussed alongside *δηϊοτής*, is given an accent on the final syllable, not on the penultimate, by Arcadius (30. 2–3). Secondly, Stephanus of Byzantium tells us that Herodian gave *Τροιζήν* an acute on the final syllable, contrary to Eustathius' implication in the first of the two passages quoted above.[65]

[61] The source of the Attic eta in the suffix *-τητ-* was an IE **-ā-* (cf. Lat. *cīuitās* 'state') and therefore remained as *ā* in Doric and Aeolic.

[62] Van der Valk's *οὐκοῦν* here is a misprint; cf. Stallbaum's text, with correct *οὔκουν*.

[63] Van der Valk prints *ταχυτής* and *δηϊοτής* here (and likewise Stallbaum *ταχυτής* and *δηϊοτὴς*), but the argument demands that Eustathius supposes the correct forms to be *ταχύτης* and *δηϊότης*.

[64] Lentz (1867–70: i. 83, ii. 356–7); Erbse on Sch. *Il.* 2. 561; Van der Valk on Eust. 287. 20–4.

[65] To be more precise, Steph. Byz. (49. 19) suggests that Herodian accented *Τροιζήν* in the same way when it was the name of the city as when it was the name of its founder. He does not explicitly state the accent, but Meineke prints the word with an acute on the final syllable.

It is possible that Herodian changed his mind on the accentuation of *ταχυτής* (and perhaps *δηϊοτής* as well) or that there is something amiss in the tradition. However this may be, we can accept as a fact that Herodian wrote at some length about the accentuation of *ταχυτής* and *δηϊοτής*. His doing so implies either that the accentuation of these words was disputed in his time, or that he started a dispute by challenging received opinion.

One further argument for the accentuation of *δηϊοτής* on the penultimate syllable is implied in another passage of Eustathius, this time without a source being mentioned. This is the same argument as Lehrs (1882: 257–8) assumes to be the obvious way to arrive at an accent for *δηϊοτής*, i.e. to follow the pattern of other *-οτης* words such as *φιλότης*·

περὶ δὲ τοῦ τόνου τῆς δηϊοτῆτος, ὥσπερ καὶ τῆς ταχυτῆτος καὶ τῆς βραδυτῆτος καὶ τῶν ὁμοίων προπερισπωμένων, ἀμφιλογεῖται. οἱ μὲν γὰρ συνηγοροῦσιν ὀξέως τονοῦσθαι τὰς αὐτῶν εὐθείας. δηϊοτής γάρ, φασί, καὶ ταχυτής καὶ βραδυτής. πλείους δὲ ἀντιλέγουσι γενναιότερον βαρυτονοῦντες καὶ αὐτὰ κατὰ τὸ φιλότης φιλότητος, κακότης κακότητος. (Eust. 669. 47–50)

About the accent of *δηϊοτῆτος* (gen. sg.), and about that of *ταχυτῆτος* (gen. sg.), *βραδυτῆτος* (gen. sg.), and similar words with a circumflex on the penultimate, there is a dispute. For some people argue that their nominatives should be given an acute on the final syllable. For, they say, it should be *δηϊοτής*, *ταχυτής*, and *βραδυτής*. But more people dispute this, giving these words too a non-final accent (which is better) like *φιλότης φιλότητος*, *κακότης κακότητος*.

To summarize our findings from the surviving grammatical literature, the accentuation Aristarchus gave to the word *δηϊοτής* struck later grammarians as very strange. The only actual arguments, as opposed to simple statements, that come down to us on the accent of the word favour accentuation on the penultimate syllable.[66] Nevertheless, it was final-syllable accentuation that became the standard manuscript accentuation for this word. The reason was perhaps that Herodian had adopted final-syllable accentuation in the *Περὶ καθολικῆς προσῳδίας*, but again we have no trace of any arguments he used for doing so, and it is possible that he decided simply to respect Aristarchus' opinion.

It remains to wonder whether *δηϊοτής* could have remained part of the living language spoken by the grammarians. This seems unlikely, since forms of the word occur only in poetry, apart from occurrences in grammarians and commentators, and almost exclusively in hexameter poetry where strong Homeric reminiscence is plausible.[67]

[66] Further sources stating that *δηϊοτής* (along with *ταχυτής*, *βραδυτής*, and *ἀνδροτής*) is accented on the final syllable are *EM* 103. 1–3 and Choer. Th. 1. 326. 8–11. Importantly, they do not *argue* for final-syllable accentuation, merely *state* that these four words are exceptions to the general rule.

[67] I rely here on an electronic search of the *Thesaurus Linguae Graecae* corpus.

It thus remains mysterious why Aristarchus accented *δηϊοτήϛ* as he did unless he had access to a traditional accentuation. In the case of this word, therefore, Lehrs's hypothesis stands up to scrutiny better than it does for *ἀλεωρή* 'escape', *ἐλπωρή* 'hope', and *θαλπωρή* 'warming'.

We have thus far left the word *ἀνδροτήϛ* (or *ἄδροτήϛ*) out of consideration, since ancient statements of the reasons for a particular accentuation are lacking (see p. 39). The word has, however, attracted the interest of modern Homeric scholarship because, if *ἀνδροτήϛ* is the correct reading, its occurrences in the *Iliad* are metrically anomalous:

ὃν πότμον γοόωσα, λιποῦσ' ἀνδροτῆτα καὶ ἥβην. (*Il.* 16. 857 = *Il.* 22. 363)

Lamenting its fate, leaving behind its manhood and youth.

Πατρόκλου ποθέων ἀνδροτῆτά τε καὶ μένοϛ ἠΰ. (*Il.* 24. 6)

Longing for the manhood and brave spirit of Patroclus.

In both lines, a word with a light rather than heavy first syllable is required in the position of *ἀνδροτῆτα*. The variant *ἄδροτῆτα* is probably an ancient attempt to solve this problem, rather than the original reading.[68] Mühlestein (1958*a*: 224 n. 20; 1958*b*: 365), foreshadowed by Wackernagel (1909: 58 n. 1) and followed by Wathelet (1966: 170–1), suggested that the metrical anomaly of *ἀνδροτῆτα* was due to its development from earlier **anr̥tāta*, a suggestion implying, if correct, that the word had been taken into epic poetry at a time when Greek still had a vocalic **r̥*. The suggestion that vocalic **r̥* was still present at an early stage of the epic tradition has been widely accepted, and is able to account also for some further metrically anomalous Homeric phrases.[69] If *ἀνδροτήϛ* indeed derives from early **anr̥tās*, this word was not originally a noun in *-οτᾱ́ϛ* (becoming Attic-Ionic *-οτηϛ*) but only in *-τᾱ́ϛ*.

The accentuation of Homeric *ἀνδροτῆτα* has also been found explicable on the basis of an earlier form **anr̥tāta*. Wackernagel (1909) noticed instances in which the accent of Vedic Sanskrit fell on a normally unaccented suffix in preference to falling on a preceding *u*, *i*, *r̥*, or *-an-* (from **n̥*). For example, *purutáma-* 'very much' is found where the normal rules of Sanskrit accentuation would lead one to expect **purútama-*.[70] Wackernagel suggested that the transmitted accentuation of Homeric *βραδυτήϛ* 'slowness', *ταχυτήϛ* 'swiftness', and *ἀνδροτήϛ* 'manliness' provide evidence that the phenomenon is not an innovation of

[68] So Tichy (1981: 41–52). For differing views see Latacz (1965), with a history of the question; Beekes (1971: 353–5).

[69] Mühlestein (1958*a*: 226, *Nachtrag*; 1958*b*: 364–5); Wathelet (1966); Ruijgh (1985: 162–3); Janko (1994: 11). For contrary views see again Latacz (1965) and Beekes (1971: 353–5), but also Tichy (1981).

[70] The word *purú-* 'much', from whose stem the superlative *purutáma-* is derived, is accented on the final syllable. The superlative suffix *-tama-* ordinarily leaves the accent of the base word unchanged; see Debrunner (1954: 608–9), with further details.

Sanskrit but derives from the Indo-European parent language. In *βραδυτής* and *ταχυτής* the accent falls on the final syllable instead of the preceding *-υ-*, while *ἀνδροτής* is accented on the final syllable instead of on what was, *ex hypothesi*, originally **-r̥-* in the preceding syllable (cf. Mühlestein 1958*b*: 365 n. 11.).

Wackernagel's hypothesis concerning the accentuation of *ἀνδροτής* is open to the objection, as he recognizes, that *δηϊοτής* is also transmitted with final-syllable accentuation, as is *κουφοτής* for Attic, but neither of these words fulfils the conditions for the rule he proposes. His answers to these objections are rather weak,[71] yet it remains possible that his rule is responsible for the accentuation of *βραδυτής*, *ταχυτής*, and *ἀνδροτής*, even if it is not clear why *δηϊοτής* and Attic *κουφοτής* follow suit. It is striking that *βραδυτής* and *ταχυτής*, the only nouns in *-υτης* (gen. *-υτητος*) occurring in Homer, are accented on the final syllable whereas the regular pattern for *-υτης* words that are first attested only later is accentuation on the *-υ-*.[72] If accentuation on the final syllable was regular at an early stage of Greek for nouns in *-υτης* but the pattern was later replaced by the penultimate accentuation regular for the much larger class of nouns in *-οτης*, it is possible that the early accentuation was preserved by some sort of performance tradition in the two Homeric nouns *βραδυτής* and *ταχυτής* (and in the noun *τρᾱχυτής* occurring in Attic drama: see n. 72).

In conclusion, Lehrs's hypothesis has sometimes been invoked to explain surprising accents that are perhaps explicable in other ways (e.g. *ἀλεωρή*, *ἐλπωρή*, and *θαλπωρή*, discussed above), but in certain cases, such as that of *δηϊοτής* and of *ἀνδροτής*, the hypothesis remains the most convincing available. Moreover, the accent of *ἀνδροτής* is suspected of being genuinely ancient on the basis of philological arguments to which the ancient grammarians did not have access. No argument that the grammarians could have used for accenting the final syllable of *ἀνδροτής* can be reconstructed today, and yet the results

[71] He suggested (1909: 58–9) that **δηϊοτᾱ́ς* might be a replacement for earlier **δήϊοτᾱς* following the introduction of the law of limitation (on which see p. 60). But there is no evidence either that the word was originally accented on the first syllable or that a change of the type **δήϊοτᾱς* > **δηϊοτᾱ́ς* (rather than **δήϊοτᾱς*> **δηϊότᾱς*) was ever occasioned by the law of limitation. He regarded *κουφοτής* as modelled on **βαρυτής*, but there is no evidence for a **βαρυτής* accented on the final syllable.

[72] The only exception, apart from the precariously attested *πινυτᾱ́ς* (only at *Greek Anthology* 7. 490. 3, although the first hand in Palatinus 23 writes *πινύτατος*) is *τρᾱχυτής* 'roughness', first attested at Aeschylus, *Pr.* 80 and accented on the final syllable in Attic but on the penultimate in the Koine (Arc. 30. 4). There are altogether 27 words in *-υτης* listed by Buck and Petersen (1945: 468), not counting one attested only on inscriptions. All except those already mentioned are transmitted with the accent on the penultimate, and most appear later than Aeschylus (or the author of the *Prometheus Bound*).

of philological investigation suggest that the grammarians may very well have been right.

1.3.6 Grammarians: summary

We may now summarize what has been said about the grammarians' work on Greek accentuation. The grammatical tradition of prescribing accents for classical and pre-classical Greek began in the Hellenistic period. Most of what we are told relates to the accentuation of Hellenistic Greek, even if comparison with the accentuation of some other Indo-European languages, especially Vedic Sanskrit, suggests a high level of continuity between the Hellenistic system of accentuation and that of earlier stages of Greek (see p. 26).[73] However, when prescribing accents for the Greek of earlier authors the grammarians were faced, like Galen's readers of Hippocrates (see pp. 19–20), with words that had gone out of use. The grammarians had a number of ways of dealing with such words. They not only knew the accentuation of individual words in their language but also had some instincts and some rules for which kind of accent a word with particular characteristics should have, and could make use of these notions in assigning accents to obsolete words. They had also noticed that some words existed in slightly different forms in different dialects, and that in such cases the accent fell on the same syllable in the different forms, unless there was a general principle to prevent it. This observation could also be applied to the task of assigning accents to words of earlier authors, who often used a different form of a word from Attic and the Koine, whether a more archaic form or one taken from a non-Attic dialect. In some cases, finally, the grammarians may well have had access to a tradition of pronunciation that preserved some genuine archaisms. Although this is a point that would be difficult to establish for certain, it is not implausible *a priori* and remains the most persuasive explanation available for certain data.

1.4 Papyri

Accent marks are written in some Greek papyri of literary authors, especially in poetic texts, from the second century BC onwards.[74] Accented papyri mostly do not carry accents on every word but sporadically; the frequency with which accent marks are used varies widely

[73] On this question of continuity, see further Ch. 3.

[74] See Laum (1928); Moore-Blunt (1978); Mazzucchi (1979); Biondi (1983); Turner (1987); 'Doric' accents: Nöthiger (1971: 83–6); 'Lesbian' accents: Hamm (1958: 42–4); 'Boeotian' accents: Wilamowitz (1907: 42–4); E. Hermann (1918); Bonfante (1934); Levin (1989). Accent marks are hardly used at all in documentary papyri (see Turner 1987: 11).

with the papyrus. Where there are few accent marks, in particular, one can sometimes see that the words marked with accents are those for which the accent can help to resolve a potential ambiguity. In other cases it is not clear why a particular word has been marked with an accent.[75] In some accented papyri, the accents are not by the first hand (cf. Turner 1987: 11); this means that even if a papyrus can be dated, the date when the accents were added is not automatically given.

The accent marks in papyri look similar to those of manuscripts and printed books. As in manuscripts and printed books, there are three accentual marks in use: acute (´), circumflex (^), and grave (`). Various different systems of marking accents are found in papyri, and not all accented papyri employ one system with consistency.[76] For example, all syllables preceding the accented syllable may be marked with a grave, the accented syllable and any following syllables being left unmarked (*νὲκρον* = *νεκρόν*),[77] or the accented syllable may be marked with an acute or circumflex while all preceding syllables are marked with a grave (*φὶλὴσὶστέφανον* = *φιλησιστέφανον*),[78] or the accented syllable may be marked with an acute or circumflex while only the immediately preceding syllable is marked with a grave (*δυσμὲνέων* = *δυσμενέων*).[79]

In general, where accents are marked in papyri the position or implied position of the main accent agrees with the position prescribed by the grammarians and found in Byzantine manuscripts.[80] Occasional divergences are to be regarded as errors (Turner 1987: 11). There are also papyri of dialect texts marked with 'dialect' accents that broadly match what the grammarians tell us about the accentuation of the relevant dialects (cf. p. 70).

Although the papyri do not provide enough evidence on their own for every detail of the accentual system, they help to confirm that the system of accent placement found in manuscripts and discussed by ancient grammarians is at least as old as the second century BC.

In order to illustrate this point, I have collected examples of non-compound second-declension nominal forms with nominatives ending in *-ρος* or *-ρον* (not necessarily with the *-ρο-* being a suffix) from a selection of accented Homeric papyri.[81] Of the 174 non-compound

[75] For recent suggestions about further functions of accent marks in papyri, see Nagy (2000); Nodar (forthcoming).

[76] For a description of the various systems, see Moore-Blunt (1978).

[77] *Il.* 5. 298 on *P. Oxy.* ii. 223, col. 12 (3rd cent. AD).

[78] Pindar, *Pae.* 1. 8 S–M on *P. Oxy.* v. 841, col. 1 (2nd cent. AD): Moore-Blunt (1978: 145).

[79] *P. Oxy.* xxx. 2508. 11 (1st cent. AD; Archilochus?): Moore-Blunt (1978: 145).

[80] In some papyri confusion between acute and circumflex is relatively common. For some examples from biblical papyri, see Biondi (1983, esp. 39–40).

[81] The collections of papyri examined were the issues of the following that had appeared before August 1996: *P. Ant.*; *P. Oxy.*; *P. Ryl.*

words ending in -ρος or -ρον attested in Homer, 47[82] were found written with accents in the selection of papyri examined (several of them more than once). The total number of tokens of these words found with accents was 131. Of these 131 tokens of 47 words, there is only one example of an accent 'incorrectly' placed. This is πτόλιεθρον for πτολίεθρον.[83] It is unlikely that πτόλιεθρον corresponds to any linguistic reality; the accent as written on the papyrus violates the law of limitation, which is otherwise rigorously observed in papyri as elsewhere.[84]

An area where the papyri may provide valuable evidence concerns cases where grammarians debated the accentuation of a word in a literary text. For example, the word ἀσφοδελος is used twice in the *Odyssey* and twice in the *Homeric Hymns*[85] as an adjective meaning 'rich in asphodels'. More commonly, but always after Homer, the word is a noun meaning 'asphodel' and is accented ἀσφόδελος. According to the grammarian Herennius Philo of the first to second centuries AD, followed by Herodian, the word is accented ἀσφοδελός in its Homeric use as an adjective.[86] Trypho, on the other hand, appears already to have been familiar with this view but to have thought that the word should be ἀσφόδελος in both uses (Eust. 1698. 29 = Trypho fr. 14 Velsen). In the light of this debate, it is of interest to find that on *P. Ryl.* i. 53, fol. 92[r] (third or fourth century AD) the accentuation taught by Herodian is ignored and the adjective at *Od.* 24. 13 written ασφόδελον. A thorough examination of similar instances may shed light on the degree of importance attributed to Herodian's views at different points in the transmission of the Homeric poems, and on the history behind his influence on the accentuation of medieval manuscripts and ultimately on our modern texts. Such a study has yet to be undertaken, but aspects of the interaction between the grammatical tradition and the writing of accents and other diacritics in papyri are now studied by Nodar (forthcoming).

1.5 Fragments of ancient Greek music

The general validity of the accentual system we have receives some confirmation from fragments of ancient Greek musical notation, preserved mostly on inscriptions or papyrus. Some of the fragments are

[82] Not counting separately ειρῶν, an orthographic variant of ἱρῶν.

[83] *Il.* 9. 668 on *P. Ant.* iii. 160 (late 3rd or 4th cent. AD).

[84] The form πτόλιεθρον may well be simply an error due to the influence of πόλις. Alternatively, Anna Morpurgo Davies suggests to me that πτόλιεθρον may reflect a trisyllabic pronunciation πτόλιεθρον.

[85] *Od.* 11. 539, 24. 13; *Homeric Hymns* 4. 221, 344; always in the phrase ἀσφοδελον λειμῶνα 'meadow rich in asphodels'.

[86] For Herennius Philo's view see Eust. 906. 58, 1698. 28; Ammonius 81; for Herodian's agreement, Arc. 62. 3–4.

transmitted with words for singing, and of these some show a tendency for the melody not to conflict with the relative pitches of vowels as determined by the accentuation. West sets out the principles as follows:

1. The accented syllable is given a note *at least as high* as any other in the same word. Often, especially in polysyllabic words, it is set at the summit of a rising and falling figure.

2. A syllable bearing a circumflex accent (which represents a high pitch followed by a fall, and can only occur on a long vowel or diphthong) is often set on two notes of which the first is the higher.

3. When the accent falls on the final syllable of a word, and is not circumflex, and not succeeded by a grammatical pause, then the melody does not fall again until after the next accent. (West 1992: 199)[87]

Greek music did not *always* respect the pitch accents. The accent was largely respected in non-strophic compositions, but in strophic compositions respect for the accent would have required the words of the antistrophe to be chosen so as to correspond in accentuation to those of the strophe. We have no evidence that such an accentually determined choice of words was ever made (Pöhlmann 1960: 23; West 1992: 198–9).[88]

The earliest surviving fragment in which the word accents are respected dates from the third century BC (Pöhlmann 1960: 23). So although the fragments of Greek music provide some evidence that the system of Greek accentuation we have corresponds to what was spoken in the Hellenistic period, they provide no conclusive evidence for Greek spoken before the third century BC. Evidence that at least *some* features of the Greek accentual system were extremely old comes from the philological arguments to be mentioned in Chapter 3.

1.6 The manuscript tradition

Accents were rarely written on uncial manuscripts, but with the change to minuscule writing in the ninth century AD came a change to the consistent writing of accents on every accented word.[89] The question

[87] Tendency 3 was first noticed by Wackernagel (1896*a*). On the importance of this tendency for the phonetic interpretation of the grave accent in final 'accented' syllables, see also Ehrlich (1912: 252). Tendencies 1 and 2 go back to Crusius (1894*a*: 173; 1894*b*: 113–14).

[88] Contrary view argued by Wahlström (1970), but his methodology is open to the objection that apparent accentual responsion in poetry (significantly greater than that found in prose) can result from the fact that sequences of words with similar distributions of word boundaries and heavy syllables are more likely to have similarly placed accents than sequences of words with no such constraints on the location of word boundaries or heavy syllables.

[89] For details of the accentual conventions found in Byzantine manuscripts see Reil (1910).

of the basis for the scribes' placement of accents on ancient texts clearly arises, and *a priori* it might appear likely that scribes would have assigned accents in accordance with their own, medieval, pronunciation. There is, however, ample evidence that the accentuation of ancient texts at this period was guided by the precepts of earlier grammatical texts.

Some manuscripts have marginal notes, or scholia, referring to the statements of grammarians on accentuation. The scholia to the tenth-century *Iliad* manuscript Venetus Marcianus 822 ('A'), which are outstandingly rich in information on accentuation, include a particularly instructive note at the end of each book listing various sources used. The exact wording varies from book to book; the version at the end of the second book reads:

παράκειται τὰ Ἀριστονίκου σημεῖα καὶ τὰ Διδύμου Περὶ τῆς Ἀρισταρχείου διορθώσεως, τινὰ δὲ καὶ ἐκ τῆς Ἰλιακῆς προσῳδίας Ἡρωδιανοῦ καὶ ἐκ τοῦ Νικάνορος Περὶ στιγμῆς. (Sch. *Il.* 2 *subscriptio* (A))

There is laid out [here] Aristonicus' 'Signs' and Didymus' treatise 'On Aristarchus' editing', and also some excerpts from Herodian's 'Iliadic Prosody' and from Nicanor's work 'On the *στιγμή*'.[90]

The scholia deriving from the work of the authors here mentioned are likely to have been composed in something like the form in which we have them in the ninth century AD, in the early days of minuscule writing (see Erbse 1969–88: i. pp. xi–xiii; ii. 547). The scholiasts' attention to older grammarians' precepts on accentuation is clearly connected with the new need to write accents consistently. Other evidence that the ninth and tenth centuries were characterized by particularly strong interest in older grammatical works on accentuation includes the relationships between the surviving manuscripts for the treatise *De vocabulis quae diversum significatum exhibent secundum differentiam accentus*[91] by the sixth-century grammarian and philosopher Iohannes Philoponus. These suggest that the book was avidly copied in the tenth century (Daly 1983: pp. xiii–xxiii, esp. xxiii); in Daly's view the work was used as a schoolbook at that time (1983: p. x).

Later on in the minuscule period scribes did not have the same need for access to grammatical treatises on the accentuation of ancient Greek, since all that was required once the practice of writing accents consistently was well established was for the scribe to copy the accents from the

[90] The *στιγμή* was a lectional sign.

[91] The Greek title assigned to the work in manuscripts varies according to the manuscript, and this is one of the criteria that Daly (1983: pp. xv–xxiii) uses to distinguish between five different recensions. I give the title in the Latin form that constitutes the title of Daly's edition.

manuscript in front of him. Nevertheless, accents so written still had the grammarians as their ultimate, even if not their immediate, source.

It would be absurdly optimistic to suppose that the placement of accents in ancient texts at this period was never influenced in doubtful cases by the accentuation of the contemporary Greek language, and some medieval manuscripts are certainly more faithful than others to ancient precepts. However, the evidence that the scribes of good manuscripts relied on the precepts of older grammarians in preference to the contemporary language is corroborated by the fact that the accentuation applied to ancient texts differed in significant respects from that attested by the stress-based poetry and rhythmic prose of the period (see below). Moreover, the accents written in good manuscripts of ancient texts agree almost entirely with the precepts of Hellenistic and post-Hellenistic grammarians where these survive to be checked against the practice of the manuscripts. Since the surviving grammatical precepts represent only a small proportion of those available at the beginning of the minuscule period, we may extrapolate from the agreement of medieval texts with the surviving grammatical literature that the medieval practice of accenting ancient texts agreed with ancient doctrine to an even greater degree than we can now verify. None of these conclusions exclude the influence of the contemporary Greek language in cases where a word survived into the relevant period and ancient doctrine relating to its accentuation was unavailable.

1.7 Early medieval Greek accentuation

The metres of ancient Greek poetry are based on a rhythmic organization of the heavy and light syllables in a word. The position of the word accent plays no role in ancient metres, and therefore the poetry that comes down to us from antiquity provides no supporting evidence for the position of the word accent. During the course of the early centuries AD, however, the Greek accent changed from a 'pitch accent' to a 'stress accent' (see pp. 55–7), and with this change came a new type of poetic metre whose basis was the pattern of stressed and unstressed syllables. The beginnings of stress-based metre may be seen in two hymns of the fourth-century AD Christian writer Gregory of Nazianzus.[92] In the sixth century AD the surviving *kontakia*, or sermons in verse, of Romanos provide a substantial body of composition in highly developed stress-based metres.[93]

At the same time as stress-based poetry developed, some prose writers began to adopt certain rules governing the placement of word

[92] See Meyer (1885: 313–15, 400–9).
[93] See Maas and Trypanis (1963: 511–38).

accents towards the ends of clauses. In some prose texts such rules were observed with a very high level of consistency.[94]

Since accent marks were virtually not written on uncial manuscripts, poetry such as that of Romanos, and prose such as that of his contemporary Choricius of Gaza,[95] was originally written without accent marks. Later, minuscule manuscripts of early medieval authors are marked with accents in accordance with the Hellenistic system for writing accents on ancient texts. We therefore have no *direct* access to the state of the accentuation system in the early Middle Ages. Since modern Greek has largely kept unchanged the positions of the accents on words that were already part of the language in the Hellenistic period, one might expect the positions of the word accents in the early Middle Ages to be likewise not far removed from those of the Hellenistic period. The stress-based verse and rhythmic prose of the period confirms this expectation, but also demonstrates that in some words the position of the accent has shifted. In many cases, the disagreements with the Hellenistic accent system show developments that continue, at least to some extent, into modern Greek. We also find some innovations in accentuation that seem later to have been dropped again in favour of the ancient accentuation, or that persist into the modern language alongside, rather than instead of, the ancient forms. Romanos' placement of genitive plurals of masculine first-declension nouns demonstrates that he accented these on the penultimate syllable, by contrast with their ancient accentuation on the final syllable: *οἰκέτων* (∪—∪), *ψεύστων* (—∪), *δυνάστων* (∪—∪), *στρατιώτων* (∪∪—∪) (Maas and Trypanis 1963: 514). Hatzidakis (1892: 420; 1905–7: ii. 88) reported at the turn of the nineteenth and twentieth centuries that the modern Greek accentuation for genitive plurals of this type, when they were in use,[96] was frequently on the penultimate syllable, although some were accented on the final syllable and some varied between accentuation on the final and on the penultimate syllable. Panagiotis Filos tells me that for the last word just mentioned the only pronunciation now familiar to him is *στρατιωτών*, with stress on the final syllable, and that *ψευτών* (for Romanos' *ψεύστων*, ancient *ψευστῶν*) is in occasional use, again with final-syllable stress.[97] Again, Romanos uses the genitive *σάββατου*, accenting it on the antepenultimate syllable (Maas and Trypanis 1963: 515); Hatzidakis (1905–7: ii. 89) mentioned *σάββατου* as peculiar to the modern dialect of Thrace, the more widespread modern form of his day being *σαββάτου*. Panagiotis Filos tells me that today variation between *σάββατου* and *σαββάτου* exists everywhere in standard modern Greek, *σαββάτου* still

[94] See Meyer (1891); Maas (1902; 1962: 16–17); Klock (1987: 219–97).

[95] See Maas (1930).

[96] The genitive plural was (and is) itself passing out of use in modern Greek (Hatzidakis 1892: 420–1).

[97] The genitives plural *οἰκέτων*/*οἰκετών* and *δυνάστων*/*δυναστών* are now obsolete.

being the more usual form. The influence of the ancient literary language on the development of modern Greek means that many archaic forms, including old accentuations, could fall out of common use at one period without being entirely lost from the language; lingering on as learned or theoretically correct forms, they could be recalled into active use by the archaizing tendencies of a subsequent era.[98] The stress-based poetry and rhythmic prose of early medieval Greek thus not only provides evidence for the dating of certain accentual changes attested by modern Greek but also gives some insight into the overall, and not entirely linear, character of the post-Hellenistic development of the accent system.[99]

The early medieval system of accentuation is both different from the Hellenistic system and a linguistically plausible continuation of it. Since the stress-based poetry and rhythmic prose of the period are fundamentally independent of our sources of evidence for the Hellenistic system, they help to confirm that the Hellenistic system as we have it indeed represents the accentuation of an earlier stage of the language.

1.8 Conclusions

We have seen that our knowledge of ancient Greek accentuation rests on a grammatical tradition whose roots lie in Hellenistic Alexandria and whose general reliability, at least for the Hellenistic period, is supported from a number of different angles. The accents prescribed by the Hellenistic grammarians and written in some literary papyri agree with those presupposed by the melodies of musical compositions surviving from the same period. Comparison with the accentual systems of some other ancient Indo-European languages, particularly Vedic Sanskrit, and with that of modern Greek, reveals correspondences that demonstrate a high level of linguistic reality in the Hellenistic system. In addition, the correspondences with other ancient Indo-European languages hint at considerable continuity with the past, something that should encourage us to consider in more detail exactly which aspects of our Hellenistic system were inherited from Indo-European and whether any chronological deductions regarding specific Greek innovations can be made. These questions will be approached in Chapter 3, after we have first outlined some important aspects of the Hellenistic system handed down to us by virtue of the sources just considered.

[98] For the tension between innovation and archaizing that has characterized the history of Greek far more strongly than that of most languages, see Horrocks (1997), *passim*.

[99] For accentual deductions from rhythmic prose, see Maas (1930); Klock (1987: 298–300). For deductions from accent-based poetry, see Krumbacher (1901: 710–12); Maas (1903: 318–20; 1924: 10–11); Maas and Trypanis (1963: 513–16).

2 SOME BACKGROUND ON GREEK ACCENTUATION

2.1 Introduction

This chapter surveys some of the salient characteristics of the Greek accent system that emerge from the ancient evidence considered in Chapter 1, putting together that evidence with some insights from modern investigations into the nature of accent in many of the world's languages. The following account is deliberately selective, concentrating on very general qualities of the system in order to provide a context for the more specific data to be examined in Part II. Since it is surprisingly difficult to pin down what is actually meant by 'accent' (even once the terminological issues discussed on pp. 7–9 are set aside), we shall begin with an attempt at a definition.

2.2 Definition of accent

Intuitively, an accent is a means of marking one syllable in a linguistic unit as phonetically more prominent than the others. The linguistic unit that will be of interest to us is the word,[1] and we shall use 'accent' to mean 'word accent'.[2]

[1] The notion of word accent presents a risk of circularity, since the word (or 'phonological word'), in the sense we require, is sometimes defined with recourse to the notion of accent. As far as ancient Greek is concerned, however, the phonological word can in most cases be regarded as coinciding with the syntactic word. Greek syntactic words have relatively free mobility within the phrase, as contrasted with the fixed order and lack of separability obtaining between the elements of a word's internal structure. Some short words, especially words with grammatical function rather than lexical meaning (e.g. prepositions, discourse particles), are not full phonological words but proclitics or enclitics: see pp. 69–70.

[2] In some languages, a word may have subordinate or secondary accents as well as its main or primary accent (cf. English *màthemátical*). For ancient Greek, the only instances where we know that a word had more than one accent involve a full word followed, under certain conditions, by an enclitic (see p. 70); in these cases we do not know whether the accent induced by the enclitic was equal in prominence to the word's original accent, or less prominent, or more prominent. For modern Greek, Arvaniti (1992) finds no evidence that a word can carry more than one accent except that a word accented on the antepenultimate syllable and followed by an enclitic acquires a second accent on its final syllable. In this case, the word's original accent is reduced in prominence compared to the accent induced by the enclitic. Given the differences between the nature of the ancient Greek accent and that of modern Greek, however, no firm conclusions can be

For many languages, including English, and probably for ancient Greek as well, it is more correct to say that the accented syllable is phonetically the most prominent when the word is pronounced in isolation, since in connected speech this prominence may not always be observable.[3]

In most languages with a word accent, sentence intonation patterns interact with the word accent in connected speech, and the word accent may sometimes seem not to be phonetically realized. In English, for example, the word *buffaloes* is stressed on the first syllable when pronounced alone, but the following piece of conversation may be uttered quite naturally with all syllables of the word *buffaloes* being equally unemphatic: 'I've *already* asked Miri.' 'Then ask the *other* buffaloes.' By contrast, the word *other* is likely to be pronounced with a distinct emphasis on its first syllable. The same syllable is phonetically the most prominent when the word *other* is pronounced in isolation. It is the 'accented' syllable.

The word accent, then, is not necessarily realized phonetically in every utterance of a given word. However, a native speaker (and an accomplished non-native speaker) knows where the accented syllable of any word falls and can produce the required accent where appropriate. Following this line of thought, we may define word accent as an abstract property belonging to one syllable of every word and making the syllable a potential bearer of the phonetic prominence we associate with accentuation. Appropriate circumstances are required for this phonetic prominence to be realized. The notion that an abstract accentual feature or potential prominence needs to be distinguished from actual phonetic prominence is taken even further in studies on Greek accentuation taking a generative approach. We shall discuss some generative ideas in Chapter 4 (pp. 112–23).

We do not have detailed information on ancient Greek sentence intonation and how it interacted with accentuation.[4] However, it is at least clear that in connected speech there was some interaction between the word accents of adjacent words. We shall see later on that certain types of word were probably pronounced either without phonetic

drawn here for ancient Greek on the basis of its modern descendant. Since we are interested in the main or primary word accent of ancient Greek, and we leave aside the question of secondary accents, 'accent' in this book may always be taken as strictly synonymous with 'main word accent'.

[3] Cf. Ladefoged (2001: 91), speaking primarily of English: 'The form in which a word is pronounced when it is considered in isolation is called its **citation form.** At least one syllable is fully stressed and has no reduction of the vowel quality. But in connected speech, many changes may take place.'

[4] For an attempt to put together as much information as possible, mainly on the basis of the musical fragments, see Devine and Stephens (1994: 376–497).

prominence on the accented syllable or with reduced phonetic prominence in most contexts within the sentence (p. 59).

I shall often speak as if accent can simply be equated with phonetic prominence on a particular syllable of a given word. It should be remembered that this manner of speaking is only a convenient shorthand and that accent is to be understood as an abstract property of that syllable—part of the speaker's knowledge about the word—, making it always a potential bearer but only sometimes an actual bearer of phonetic prominence.

2.3 Phonetic nature of the Greek accent

The main phonetic characteristic of the accent noticed by our ancient Greek sources was high pitch; ancient Greek has correspondingly been described as a 'pitch accent language'. The essential difference between what has long been called a 'pitch accent language' (e.g. Japanese, ancient Greek) and a so-called 'stress accent language' (e.g. English, modern Greek) has been much debated. Traditionally, it had been assumed that there was some phonetic basis for the distinction (e.g. Grammont 1960: 115–17, 125–9). However, the difficulty of defining the phonetic substance of this difference led to suggestions that the difference lay not in the phonetic character of the contrast between accented and unaccented syllables but somewhere else. For A. Schmitt (1924, esp. 55–81), for example, the crucial factor was not the phonetic means of distinguishing accented from unaccented syllables but the degree of contrast made between an accented and an unaccented syllable.[5] For Jakobson (1931: 166–71), followed by Szemerényi (1996: 73), the essential difference is that in a 'stress accent' language the unit that bears the accent is the whole syllable whereas in a 'pitch accent' language it is a sub-part of the syllable, the 'mora'.[6]

It follows from Jakobson's definition that if a 'pitch accent' language has syllables containing two morae it may be possible for these to be accented in more than one way—either on the first mora or on the second. Such a contrast should be impossible in a 'stress accent' language. There are indeed languages—including ancient Greek, as we shall see—in which syllables containing two morae can be accented in

[5] Coetsem's recent study of lexical accent typology (1996) returns to a variant of this view which, however, also allows for a phonetic distinction between 'pitch' and 'stress' accent. For Coetsem, both types of accent employ pitch as a means of achieving phonetic prominence, but a 'pitch accent' uses pitch *alone* and therefore makes only the minimal possible contrast between accented and unaccented syllables, whereas a 'stress accent' employs auxiliary material other than pitch to maximize the contrast (1996: 34–43).

[6] We shall define 'mora' more precisely in § 2.4 (with n. 13) below.

more than one way. This phenomenon appears to be found only in languages traditionally described as 'pitch accent' languages.

This empirical support for Jakobson's view does not, however, demonstrate that the difference in accent-bearing unit (syllable versus mora) is necessarily the only or even the essential difference between a pitch and a stress accent. Recently, some phoneticians have returned to the view that there is a phonetic basis for the distinction, namely that in a pitch accent language a change in pitch is the *only* phonetic correlate of accent, whereas in a stress language the word accent manifests itself phonetically by a pitch change in combination with other factors (see Beckman 1986; Devine and Stephens 1994: 199, 211).[7] This notion is founded on Beckman's (1986) work on the difference between the accents of Japanese and English.

If such a view is accepted, it is probably necessary to recognize at least a third type of accent, that which Devine and Stephens (1994: 206) call 'pitch differentiated stress'; in the languages involved (e.g. Swedish, Lithuanian) the accent of every word has one of two or more contrasting pitch contours, but additionally involves other phonetic elements such as intensity and duration.

Ladd (1996: 156) argues that two independent typological parameters have to be taken into consideration: whether a language has stress or non-stress (i.e. 'pitch') accent, and whether or not it has lexically specified pitch features. In a language with stress accent, accents are realized by a combination of phonetic characteristics such as intensity, duration, and often a change in pitch. In a language with non-stress accent, accents are realized by a pitch change alone. If a language has lexically specified pitch features, the actual pitch contour of a word is determined at least in part by the particular word or meaningful part of a word (such as a root, prefix, or suffix) involved.

On Ladd's classification English has a stress accent, since pitch change is only one of the phonetic correlates of accent. There are no lexically specified pitch features in English, because although the position of the word accent is characteristic of a particular word and is often associated with a change in pitch, the actual pitch contour involved is determined entirely by additional information being conveyed, not by the word in question. For example, the word *horses* may be spoken with a particular (high–low) pitch pattern by a child pointing out of a train window at some horses, and with a different (low–high) pattern by one pointing questioningly at some animals that look, from a distance, as if they *might* be horses. Japanese, by contrast, has a non-stress accent and also lexical pitch features, because the pitch contour of a word is determined at least in part by the particular word involved, not purely

[7] On Coetsem's variant of this view, see n. 5 above.

by other factors.[8] Swedish has lexical pitch, like Japanese, but a stress accent.[9] Finally, Ladd's classification includes a fourth type of language, of which he identifies Bengali as an example. Such a language has a non-stress accent, like Japanese, but no lexically specified pitch features, because the word accent is realized phonetically by a change in pitch without the *type* of pitch change being determined by the particular word involved.[10]

For ancient Greek, it is fairly clear that at least certain aspects of the pitch contour associated with a word, such as the location of the highest pitch, were fixed characteristics of the word in question, so that on Ladd's classification Greek would belong to those languages with lexically specified pitch. In other words, Greek would have either a Japanese type of accent (with pitch alone as the phonetic correlate of the accent) or a Swedish type (also traditionally referred to as a 'pitch accent') in which the pitch contour was at least partly fixed for a particular word but other factors were also involved in the phonetic realization of accent. I feel that there is not sufficient evidence to decide between these possibilities.[11] The evidence from ancient grammarians shows that native speakers regarded pitch as the salient feature of the accent of their language, but this judgement would be typical for a Swedish as well as a Japanese type accent—hence the traditional designation 'pitch accent' for both types of accent.

2.4 Domain of the Greek accent

The ancient Greek accent must fall on a vowel or diphthong.[12] Long vowels and most diphthongs, if accented, may have the high pitch either near the beginning of the long vowel or diphthong or near the end. No

[8] For further details, see Pierrehumbert and Beckman (1988).

[9] The point being made here about Swedish is not exactly the same as that made by Devine and Stephens (1994: 206) when they classify Swedish as a language with 'pitch differentiated stress'. For a language to have lexically specified pitch features on Ladd's classification, it is not necessary that there should be contrasting types of accent involving different sorts of pitch change (as there are in Swedish) but only that certain aspects of the pitch contour of a particular word are fixed features of that word, not dependent on the intonational context.

[10] For further details on the ways in which pitch contours are determined by intonational context in Bengali, see Hayes and Lahiri (1991). Notice that if a language has non-stress accent and no lexically specified pitch features, the only evidence for the existence of 'accent' at all is that a particular position in the word serves as a point to which certain intonational events are tied. Hayes and Lahiri (1991: 56–7) justify the assumption of accent (always on the word-initial syllable) in Bengali on this basis, but also suggest that there is sometimes audible stress on the accented syllable, especially in emphatic speech.

[11] Devine and Stephens (1994, esp. 214) argue for a Japanese-type pitch accent. The argument depends on their view that Greek had a rhythmic organization of syllables independent of the pitch accent; cf. (with some reservations) Probert (2001: 88).

[12] But see Probert (2003: 148–50), with bibliography.

such contrast is possible for an accented short vowel. (Certain word-final diphthongs are treated for the purposes of accentuation as if they were short vowels; on these see p. 61.) A syllable whose nucleus is a short vowel thus contains one accentable unit or timing-slot; one whose nucleus is a long vowel or diphthong (other than one of the exceptional diphthongs just referred to) contains two. These accentable units are traditionally known as *morae*, and we shall use this term.[13] In some studies of Greek accentuation, long vowels are represented as sequences of two vowels; using this notation, we may show the different kinds of accent possible on short and long vowels thus:[14]

accent on short vowel:	*agat^{h}ós*	(nom. sg. m.) 'good'
accent on first mora of long vowel:	*agat^{h}óon*	(gen. pl.)
accent on second mora of long vowel:	*agat^{h}eé*	(nom. sg. f.)

2.5 The use of the three accent marks

Three signs for accents are employed in our texts of ancient Greek: acute (´), circumflex (ˆ), and grave (`). The acute over a short vowel marks the word accent on that short vowel. The acute over a long vowel or (in general) a diphthong indicates a word accent on the second mora of that long vowel or diphthong:

agat^{h}ós = ἀγαθός
agat^{h}eé = ἀγαθή

The circumflex may only be written over a long vowel or diphthong, and indicates that the word accent falls on the first mora:

agat^{h}óon = ἀγαθῶν

In the earliest accented papyri, the grave accent could be written on any unaccented vowel. In the system of writing accents that had become regular by the Byzantine period, however, the grave is never used when a word is written by itself. Rather, a word that has a final acute when written in isolation is written with a final grave before another non-enclitic word (on enclitics see pp. 69–70) in the same sentence, as long as punctuation does not intervene.[15] Thus, the genitive singular

[13] In phonological work within metrical and autosegmental theory, the term 'mora' is used for any element, whether vocalic or consonantal, that contributes to syllable weight, and the term 'Tone Bearing Unit' would be used where 'mora' is used in this book.

[14] I use this notation here for expository convenience only, not to imply a particular phonological analysis.

[15] The interrogative pronoun τίς 'who?' and its neuter form τί 'what?' are not affected by this rule.

Διός 'of Zeus' has an acute on the final syllable when written in isolation or before punctuation or an enclitic; in the expression Διὸς υἱός 'son of Zeus', however, the final syllable of Διός is written with a grave.
Opinions differ on the phonetic significance, if any, of this use of the grave. Laum (1920; 1928) argued that it was a purely graphic convention of *c.*400 AD except (*a*) in monosyllables, and (*b*) in disyllabic prepositions followed immediately by an accented syllable, but objections were noticed almost immediately.[16] There are several indications that the grave which 'replaces' a final acute had a different accentual status from other accented syllables at least as early as the Alexandrian period. It has been suggested (e.g. Grammont 1948: 390) that this grave represents the neutralization of the final acute before another non-enclitic word, i.e. that a syllable with the grave accent is equivalent to an unaccented syllable. However, evidence from the fragments of ancient Greek music (tendency 3 on p. 48) suggests that the grave was not simply the equivalent of an unaccented syllable. It is likely that the grave which replaces the acute on a final syllable indicates that the syllable is to be pronounced on a pitch higher than that of the preceding unaccented syllables but lower than that of other accented syllables.[17]

2.6 'Fixed' versus 'free' accent

Languages in which words are characterized by one main accent can be broadly divided into 'fixed accent' and 'free accent' languages. In 'fixed accent' languages, the position of the word accent is predictable on purely phonological criteria. In French, for example, native words are accented on the final syllable except in contexts where there is a pronounced final schwa.[18] In classical Latin the accent rule is more complicated, but it also refers only to the phonological shape of the word:

[16] See Giessler (1923); Wackernagel (1926: 53–4, 59); Debrunner (1929); E. Hermann (1930); Moore-Blunt (1978); Mazzucchi (1979). An historical explanation of the phenomenon (which would, if correct, imply that the grave accent represented a linguistically real modification of the high pitch) is given by Meillet (1905–6: 245–9).

[17] For a range of variations on this view, see e.g. Debrunner (1929: 54–5); Sturtevant (1940: 100–1); W. S. Allen (1973: 245–8); Devine and Stephens (1994: 180–3).

[18] In connected speech an accent is retracted from a final onto a non-final syllable if an accented monosyllable follows in the same phrase, and in certain other contexts (see Dell 1984: 106–7). Such phenomena of 'stress clash avoidance' exist in other languages too, including English (cf. *thirtéen* versus *thírteen mén*), and depend only on the accentual relations between adjacent words in a phrase, not on any further characteristics of the particular words involved. (In lexical phonology terms, they are postlexical rather than lexical phenomena.) For discussion of French accentuation and the ways in which it is manifested in its interaction with intonation, see Dell (1984).

the accent falls on the penultimate syllable if that syllable is heavy, otherwise on the antepenultimate.[19]

In 'free accent' languages, e.g. Lithuanian, each word again has one main accent, but the position of the accent is not predictable from the phonological shape of the word. For some words, the position just has to be learned: it is an idiosyncratic property of the word. For other words, it can be predicted given some morphological information.

Greek is fundamentally a free accent language.[20] However, unlike the Lithuanian accent, whose placement is subject to no phonological restrictions, the Greek accent is only 'free within limits' (Szemerényi 1996: 74): its position is not predictable from the phonological shape of the word, yet there are certain phonologically defined positions where the accent may fall and others where it may not.

2.7 Limitations on the position of the Greek accent

The main set of restrictions limits how far from the end of the word the Greek accent may fall. These are known collectively as the 'law of limitation' and may be given informally as follows:

(*a*) An acute accent may not fall further from the end of the word than the antepenultimate syllable (*λεγόμενος* is possible but **λέγομενος* is not).
(*b*) A circumflex may not fall further from the end of a word than the penultimate syllable (*σωτῆρα* is possible but **σῶτηρα* is not).
(*c*) If the final syllable contains a long vowel or is closed by a consonant cluster, no accent may fall further from the end of the word than the penultimate syllable (*λεγομένου* and *πομφόλυξ* are possible but **λεγόμενου* and **πόμφολυξ* are not).[21]
(*d*) If the final syllable contains a long vowel, a circumflex may fall only on the final syllable (*λιγυροῦ* and *ἀνθρώπου* are possible but **ἀνθρῶπου* is not).

[19] Monosyllabic and disyllabic words are simply accented on the first syllable (except for some that are unaccented). A handful of exceptions to the Latin accent rule arose historically when the final syllable was lost and the syllable that had been the penultimate, and had carried the accent, became final but did not lose its accent, e.g. *illīc* 'there' < **illīce* (see Niedermann 1953: 14).

[20] On the fixed accentuation of the Lesbian and possibly Thessalian dialects, see §§ 2.11.2 and 2.11.4 below.

[21] The application of this restriction to words ending in consonant clusters was noticed in the 19th cent. by Göttling (1835: 27) and Misteli (1868: 107) and highlighted in the 20th by Steriade (1988: 273–5).

There is a further restriction that applies to most of the dialects for which we have accentual information,[22] known as the '*σωτῆρα*' rule (also the '*ἦμα* rule' or 'final trochee rule'[23]):

(*e*) An accent on a long vowel in a penultimate syllable must be a circumflex if the vowel of the final syllable is short (*σωτῆρα* is possible but **σωτήρα* is not).

2.8 Final diphthongs

All diphthongs in Greek are long in duration. In general, they are also treated as long vowels, just as one might expect, for the purposes of the accentual rules. Word-final *-αι* and *-οι*, however, are treated by the rules of accentuation as if they were short when they occur in indicatives, subjunctives, imperatives, infinitives, or nominatives plural: *βούλομαι*, *βούλονται*, *βούλωμαι*, *βούλωνται*, *παίδευσαι* (aorist imperative middle), *παιδεῦσαι* (aorist infinitive), *ἄνθρωποι*, *τράπεζαι*, *οἶκοι* (nominative plural).

In the third person singular of the optative, however, final *-αι* and *-οι* count as long: *παιδεύσαι* (optative), *παιδεύοι*. Final *-αι* and *-οι* likewise count as long in locative adverbs, e.g. *οἴκοι* 'at home', *Μεγαροῖ* 'at Megara', and in certain interjections, e.g. *αἰαῖ* 'alas'.[24]

Notice that although some instances of word-final *-αι* and *-οι* count as 'short' for the purposes of the accentual rules, they make a syllable heavy (and hence they make it 'scan long' in poetry[25]) just like other diphthongs.

[22] The rule does not apply in Doric: see § 2.11.1 below.

[23] The term 'final trochee rule', although often used, is not really appropriate. A trochee is a rhythmic sequence consisting of a heavy syllable followed by a light syllable, whereas the *σωτῆρα* rule applies to a word whose penultimate syllable contains a *long vowel* and whose final syllable contains a *short vowel*; for the *σωτῆρα* rule to apply it is neither sufficient nor necessary that the word end in a trochaic sequence (cf. the trochaic word *νύκτα* 'night' (acc. sg.), to which the rule does not apply, and the non-trochaic word *κλῖμαξ* 'ladder', to which the rule does apply).

[24] The different effects on accentuation of final *-οι* and *-αι* in different contexts have sometimes been taken as evidence that Greek had syllables with contrastive 'intonations' even when those syllables were unaccented, as is often assumed for proto-Balto-Slavonic: see Brugmann (1897: 961). Whatever the origins of the phenomenon, however, its only physical or surface manifestation in the historical period appears to have consisted of the differing effects on accentuation.

[25] Instances of 'epic correption' apart (see Chantraine 1986–8: i. 88–90). Epic correption is particularly common where a final diphthong (other than a 'long diphthong' *ᾱ̃*, *ῃ̃*, or *ῳ̃*) is involved, but affects final *-οι* and *-αι* that count 'long for accentuation' as well as those that count 'short for accentuation'.

2.9 Possible positions for the Greek accent

We have seen that a Greek word has at most three syllables (the last three) on which the accent may fall, and that there are, aside from the grave, two types of written accent, acute and circumflex. The circumflex can never fall on the antepenultimate syllable, but all other potential combinations of accent type and accented syllable occur. Thus, we have the following five possibilities:

acute on final syllable: λιγυρός (oxytone)
circumflex on final syllable: λιγυροῦ (perispomenon)
acute on penultimate syllable: πατέρα, λεγομένου (paroxytone)
circumflex on penultimate syllable: σωτῆρα (properispomenon)
acute on antepenultimate syllable: λεγόμενος, ἄνθρωπος (proparoxytone)

The words given in parentheses are the traditional terms (originating with the ancient grammarians) for words with the given accent type on the given syllable. Thus, a word with an acute on the final syllable is said to be oxytone, one with a circumflex on the final syllable perispomenon, and so on.

This traditional classification of words according to the type of written accent and the syllable from the end of the word where it occurs is not, however, the most useful for our purposes. It will be important to distinguish words in which the accent falls as far from the end of the word as the law of limitation allows from words in which the accent falls nearer to the end. Of the examples given above, λεγομένου, λεγόμενος, and ἄνθρωπος have the accent as far from the end of the word as possible, given the law of limitation; the other words do not. Notice in particular that πατέρα does not have an accent as far as possible from the end of the word whereas λεγομένου does. The traditional classification thus does not make clear the division between words with an accent maximally far from the end and words with the accent in some other position. Words in which the accent falls as far from the end of the word as permitted by the law of limitation (λεγομένου, λεγόμενος, ἄνθρωπος) are called 'recessive'; others (λιγυρός, λιγυροῦ, πατέρα, σωτῆρα) may be called 'non-recessive'.

As shown in Table 2(a), for any given shape of word there are at most three possible positions for the accent. For each shape of word, it is possible—by definition—for the accent to fall in the recessive accent position, as near to the beginning of the word as the law of limitation allows. Words displaying this accentual position have been given the number 3 in the right-hand column of the table. In addition, it is possible for the accent to fall on the final syllable of the word (1, 1a, or 1b). For words with a final long vowel, the final syllable contains two accentable morae and the accent must fall either on the second (acute;

Table 2(a). *Possible positions for the Greek accent*

Vowels of last three syllables	Word-final consonant cluster	Possibilities
Short–short–short[a]	No	1. λιγυρός 'shrill' 2. πατέρα 'father' (acc. sg.) 3. ἄλκιμος 'mighty'
Short–short–short	Yes	1. νεκροβαστάξ 'corpse-bearing' 3. πομφόλυξ 'bubble'
Short–short–long	Yes/No	1a. λιγυρούς 'shrill' (acc. pl. m.) 1b. λιγυρῶν 'shrill' (gen. pl.) 3. ἀλκίμους 'mighty' (acc. pl. m./f.)
Short–long–short	No	1. ἰσχῡρός 'strong' 2. δοτῆρα 'giver' (acc. sg.) 3. ἄνθρωπος 'man'
Short–long–short	Yes	1. βαβαιάξ 'Oh!' 3. πολυπῖδαξ 'with many springs'
Short–long–long	Yes/No	1a. ἰσχῡρούς 'strong' (acc. pl. m.) 1b. ἰσχῡρῶν 'strong' (gen. pl.) 3. ἀνθρώπους 'men' (acc. pl.)
Long–short–short	No	1. ψῡχικός 'spiritual' 2. ποικίλος 'many-coloured' 3. δαίδαλος 'cleverly made'
Long–short–short	Yes	1. αὐτοδάξ 'with the very teeth' 3. παιδότριψ 'gymnastics teacher'
Long–short–long	Yes/No	1a. ψῡχικούς 'spiritual' (acc. pl. m.) 1b. ψῡχικῶν 'spiritual' (gen. pl.) 3. δαιδάλους 'cleverly made' (acc. pl. m.)
Long–long–short	No	1. κωμῳδός 'comic singer' 2. γυναικεῖος 'feminine' 3. εἴδωλον 'phantom'
Long–long–short	Yes	1. (εὐράξ) 'sideways'[b] 3. μῑκραῦλαξ 'with small furrows'
Long–long–long	Yes/No	1a. κωμῳδούς 'comic singers' (acc. pl.) 1b. κωμῳδῶν 'comic singers' (gen. pl.) 3. εἰδώλων 'phantoms' (gen. pl.)

[a] Final diphthongs counting as 'long' for accentuation (see § 2.8) are to be understood as included under 'long vowel', and those counting as 'short' as included under 'short vowel'.

[b] There are no good examples of trisyllabic or longer words with antepenultimate long vowel, penultimate long vowel, final short vowel, final consonant cluster, and accent on the final syllable, but this absence is accidental. There are altogether few words ending in consonant clusters, and of these only a small proportion have the accent on the final syllable.

1a) or the first (circumflex; 1b). However, for words in which the final syllable consists of an inflectional suffix the choice between acute and circumflex on a final long vowel is determined by the identity of the suffix. Some inflectional suffixes with a long vowel take an acute if they are accented while others take a circumflex. The words *λιγυρούς*, *ἰσχῡρούς*, *ψῡχικούς*, and *κωμῳδούς* in table 2(a) have the accusative plural ending *-ους*, which takes an acute if it is accented, while *λιγυρῶν*, *ἰσχῡρῶν*, *ψῡχικῶν*, and *κωμῳδῶν* have the genitive plural ending *-ων*, which takes a circumflex if accented.[26]

The choice between acute and circumflex on a final syllable containing a long vowel is made independently of the factors determining whether the final syllable actually carries the accent. Thus, although the accusative plural ending *-ους* demands an acute rather than a circumflex if it is accented at all, the presence of *-ους* does not guarantee that the final syllable *will* be accented. The word *ἀνθρώπους*, for example, has *-ους* but the accent does not fall on the final syllable. The same independence between the type of accent on a final syllable and the presence or absence of an accent on the final syllable in the first place obtains for words whose final syllable does not consist of an inflectional suffix. Thus, the root *-ωπ-* 'eye' always takes the acute if it appears in an accented final syllable (as in *μονώψ* 'one-eyed'), but a final syllable containing *-ωπ-* need not be accented (cf. *Κύκλωψ* 'Cyclops'). Conversely, the presence of the derivational suffix *-ευ-* (as in *ἱππεύς* 'horseman') implies an accent on the syllable *-ευ-*, but the mora on which the accent falls is determined by the case of the noun: nominatives in *-ευς* have an acute accent (*ἱππεύς* 'horseman') but vocatives in *-ευ-* have a circumflex (*ἱππεῦ*).

We shall treat accent types 1, 1a, and 1b as variants of a single type, 'final accentuation'. If a finally accented word has a short vowel in its final syllable, it will have accent type 1. If the final syllable has a long vowel, it will have accent type 1a if that syllable takes an acute and accent type 1b if it takes a circumflex. Since we shall be concerned with the principles determining accent placement on a particular syllable rather than those determining whether an accented final syllable has an acute or a circumflex, these three possibilities may conveniently be treated as variants of a single accent type.

For some word shapes, there is an accentable position between the position for a recessive accent and that for final accentuation. Words with the accent in this position have been given the number 2 in the

[26] An ending that normally takes an acute if accented will, however, take a circumflex (on the surface) if it conceals a sequence of two vowels that have contracted and the uncontracted form has the accent on the first of the vowels in the sequence. Thus, Attic *ἀργυροῦς* < *ἀργυρέους*, acc. pl. m. of *ἀργυροῦς* 'made of silver'.

table. We shall call this type of accent (as in *ποικίλος*) 'intermediate accentuation'.

In general, inflected words have the same accent type throughout the paradigm, but there are some important exceptions. Certain third-declension nouns have an accent falling on the stem in some forms of the paradigm and on the ending in others ('mobile accentuation'). Thus, *πατέρα* 'father' (acc. sg.) has an accent on the stem (intermediate accentuation), but the genitive singular *πατρός* has an accent on the ending (final accentuation). This type is essentially an archaic survival, but remained productive within a restricted set of third-declension nouns, those with monosyllabic stems (e.g. *πούς* 'foot', acc. sg. *πόδα*, gen. sg. *ποδός*).

For word-forms ending in a syllable with a long vowel or closed by a consonant cluster there is no position between the one for final accentuation and that for recessive accentuation, and so intermediate accentuation cannot be realized in a way that distinguishes it from the other accent types. The accent that appears is, as we have defined it, a recessive accent, but there is no meaningful distinction between recessive and intermediate: the contrast between recessive and intermediate accentuation is neutralized. Thus, the nominative singular *ποικίλος* has intermediate accentuation but in the accusative plural *ποικίλους* no contrast between intermediate and recessive accentuation is possible. We may call the accent recessive, but it could just as well be called intermediate.[27]

For disyllabic words, no distinction between intermediate and recessive accentuation is possible. We define a disyllable with accent on the first syllable (e.g. *δέκα* 'ten', *μοῦσα* 'muse') as recessive and one with the accent on the final syllable as finally accented (e.g. *σοφός* 'wise', gen. pl. *σοφῶν*).

Accented monosyllables containing a long vowel or diphthong[28] are rather special since phonologically they allow a contrast between acute and circumflex accents, as is usual for final syllables, but an accent falling on the first mora (a circumflex) is at the same time one falling as far from the end of the word as phonologically possible. In these cases

[27] Some didactic works draw a fundamental distinction between paradigms with 'persistent' accentuation and those with 'recessive' accentuation. In this tradition, a word whose paradigm has 'persistent' accentuation is accented in every form as near as possible to the position of the accent in the dictionary form. A paradigm with 'recessive' accentuation has the accent of every form as far from the end of the word as the law of limitation allows, regardless of the position of the accent in the dictionary form. This distinction between 'recessive' and 'persistent' paradigms will not be directly helpful to us; I mention it only to draw attention to the fact that the distinctions being made here are somewhat different.

[28] Apart from those diphthongs that count 'short' for accentuation (see § 2.8 above), as in *σοί*, *σαί* 'your' (nom. pl. m. and f.).

we define an accent on the first mora (*Ζεῦ*) as a recessive accent, an accent on the second mora (*Ζεύς*) as a final accent. Again, however, there is no meaningful contrast between recessive and intermediate accentuation.

Nouns of the first declension are all[29] finally accented in the genitive plural, regardless of the accent placement in the rest of the paradigm. Thus the nominative singular *βουλή* 'council' corresponds as one might expect to the genitive plural *βουλῶν*, but more surprisingly the nominative singular *ζώνη* 'belt' also corresponds to the genitive plural *ζωνῶν*. The same is not, however, true for the feminines of adjectives following the second and first declensions ('*o*- and *ᾱ*-/*η*- stem adjectives'). In these adjectives, the genitive plural feminine has final accentuation if the other forms in the paradigm are finally accented, and recessive accentuation otherwise (thus nom. sg. m. *λιγυρός* 'shrill' beside gen. pl. f. *λιγυρῶν*; nom. sg. m. *ποικίλος* 'many-coloured' beside gen. pl. f. *ποικίλων*; nom. sg. m. *ξύλινος* 'of wood' beside gen. pl. f. *ξυλίνων*, etc.).

In the nominative plural, first-declension nouns with nominative singular in *-ᾱ* or *-η* ('*ᾱ*- or *η*-stem nouns') can only have either final accentuation (if the nom. sg. is finally accented) or intermediate accentuation (if the nom. sg. is recessive). Thus nominative singular *ἀγορᾱ́* 'assembly' corresponds to nominative plural *ἀγοραί* whereas nominative singular *ἡμέρᾱ* 'day' corresponds to nominative plural *ἡμέραι*.[30] The same is again not true for *o*- and *ᾱ*-/*η*-stem adjectives, where the nominative plural feminine is recessive if the nominative singular masculine and nominative plural masculine are recessive, intermediate if the nominative singular masculine and nominative plural masculine are intermediate, finally accented if the nominative singular masculine and nominative plural masculine are finally accented: nominative plural feminine *ἄξιαι* 'worthy' like masculine singular *ἄξιος* and plural *ἄξιοι* (contrast *ἀξίαι*, nom. pl. of the noun *ἀξίᾱ* 'value'); nominative plural feminine *ποικίλαι* 'many-coloured' like masculine singular *ποικίλος* and

[29] The genitives plural of *ἀφύη* (small fry of various fish), *χρήστης* 'lender', *χλούνης* 'wild boar', and *ἐτησίαι* 'Etesian winds' are exceptional: *ἀφύων*, *χρήστων*, *χλούνων*, *ἐτησίων* (Arc. 154. 24–155. 1). The words *χλούνης* and *ἐτησίαι* are properly adjectives that are also used substantivally; the accentuation of their genitives plural is that to be expected in adjectives.

[30] Several sources deriving from Herodian report that speakers of Attic, and more specifically of 'later' Attic, accent the nominatives plural of certain *ᾱ*- or *η*-stem nouns, such as *ἥμεραι* 'days', recessively: see Arc. 153. 2–4; Sch. *Il.* 2. 339b (A); Sch. *Il.* 5. 54 (A). (On the significance of references to 'later Attic' in Herodian see Probert 2004.) These Attic variants suggest some tension between two different ways in which the accent of the nom. pl. could be modelled on that of the other forms in the paradigm: either the accent falls on the same syllable as in the other forms (hence *ἡμέραι*) or the nom. pl. follows the other forms in being accented as near to the beginning of the word as the law of limitation allows (hence *ἥμεραι*); cf. n. 27 above.

plural *ποικίλοι*; nominative plural feminine *λιγυραί* 'shrill' like masculine singular *λιγυρός* and plural *λιγυροί*.

The inflectional paradigm plays an important role in determining the accentual placement of the forms of which it is composed. Thus, the fact that there are only two possible types of accentuation in the nominative plural of *ᾱ*- and *η*-stem nouns, although phonologically speaking three would be possible, is clearly connected to the fact that there are only two possibilities for all the other forms in the paradigm of *ᾱ*- and *η*-stem nouns. The existence of three accentual possibilities for the nominative plural of *ᾱ*- and *η*-stem feminines of adjectives is related to the presence of other forms in the paradigm for which there are three possibilities. These include the nominatives plural masculine and neuter, which may have been particularly crucial in determining the accent of the nominative plural feminine.

Opinions differ as to the degree to which relationships between the forms in an inflectional paradigm can be significant in synchronic terms, but it would not matter much for the present discussion if these accentual relationships between forms in a paradigm were of purely historical significance. If so, we should not say in synchronic terms that speakers make reference to their knowledge of the accent of one form in the paradigm in order to arrive at the accent of another, but that, for example, the *ᾱ*- or *η*-stem genitive plural ending *-ων*, when attached to nouns, is treated as demanding to be accented, and this demand (or 'accentual feature') overrides any accentual feature attaching to the stem that may give non-final accentuation to other forms sharing this stem (i.e. other forms in the inflectional paradigm). Again, we may characterize all non-finally accented *ᾱ*- or *η*-stem nouns as having stems that are marked for intermediate accentuation, with only the nominative plural able to realize intermediate accentuation in a way that distinguishes it from recessive accentuation. Alternatively, one could regard non-finally accented *ᾱ*-/*η*-stem nouns as having stems marked for recessive accentuation, with the nominative plural ending *-αι*, when attached to nouns, having a feature requiring that intermediate accentuation override the recessive accent of the stem.

However this may be, and leaving aside the third-declension paradigms with mobile accentuation, for every inflectional class there are either two or three possible accent paradigms (sets of accentual positions for each inflectional form).[31] There are three possibilities if some

[31] Some additional possibilities arise from the fact that certain vocatives singular have recessive accents that are not predictable from the type of paradigm or from the accent of any other paradigmatic form. Thus, the voc. sg. *ἄδελφε* 'brother' has a recessive accent in Attic (Trypho cited by Ammonius 405 = Trypho fr. 15 Velsen), whereas the nom. sg. *ἀδελφός* is finally accented; similarly the recessive accent of the voc. sg. *πάτερ* 'father' is not predictable from any other aspect of the paradigm. Cases such as this are essentially

form in the paradigm admits of all three theoretically possible accent positions (final, intermediate, and recessive) and two if no paradigmatic form admits of more than two possibilities.

The inflectional classes with three possible accent paradigms include the *o*-stem nouns and the *o*- and *ᾱ*-/*η*-stem adjectives. For these we may speak of a 'finally accented paradigm' when the forms admitting of three possibilities have final accentuation, an 'intermediate paradigm' when those forms have intermediate accentuation, and a 'recessive paradigm' when those forms are recessive. Thus, since the nominative singular masculine of an *o*- and *ᾱ*-/*η*-stem adjective is a form admitting of three possibilities, we may speak of an 'intermediate paradigm' in the case of *ποικίλος* 'colourful'. Not all paradigmatic forms have distinctive intermediate accentuation, but the accentuation of every form in the paradigm can be predicted from the fact that the nominative singular masculine, or any other form admitting of three possibilities, has intermediate accentuation. The possibilities for *o*-stem nouns are illustrated in Table 2(b).

As has already been hinted, the accent paradigm of a word can be regarded as a feature of its stem. The accent of all inflectional forms built on the stem follows from the interaction between this feature and independent accentual features of the endings involved (e.g. the overriding final accentuation of the gen. pl. ending *-ων* in *ᾱ*-/*η*-stem nouns, or the choice of acute rather than circumflex in the acc. pl. ending *-ους*).

Highly irregular paradigms apart, it is thus sufficient to state an accentual feature for the whole paradigm, or for the stem on which its forms are built, and for this purpose at most three accentual possibilities (recessive, intermediate, and final) need to be distinguished.[32] One cannot always simply equate the accent type of the nominative singular of a noun, or the nominative singular masculine of an adjective, with the accent type of the whole paradigm, but to do so does not cause any difficulty in the case of *o*-stem nouns or *o*- and *ᾱ*-/*η*-stem adjectives. Since the case studies presented here concern precisely words of these declensional classes, I shall treat the accent of the nominative singular or nominative singular masculine as representing the accent pattern of the whole paradigm. This convention will be a useful one as it is standard practice to refer to nouns by citing the nominative singular, and to adjectives by citing the nominative singular masculine, but it

archaic survivals (although this does not rule out occasional new creations; cf. Postgate (1924: 30), who assumes that the Attic recessive accent of *ἄδελφε* is an innovation *vis à vis* the *ἀδελφέ* that Trypho implies for the Koine), and they are clearly irregular in synchronic terms (cf. Ch. 5 n. 29).

[32] So also Bally (1945: 30–1). Bally's term *acrotonique* or *accent 1* corresponds to my 'finally accented', his *mésotonique* or *accent 2* to my 'intermediate', and his *anaclitique* or *accent 3* to my 'recessive'.

Table 2(b). *O-stem nouns: final, intermediate, and recessive accentuation*

	Singular	Dual	Plural
i. *κωμῳδός 'comic singer': finally accented paradigm*			
Nom.	κωμῳδός	κωμῳδώ	κωμῳδοί
Voc.	κωμῳδέ	κωμῳδώ	κωμῳδοί
Acc.	κωμῳδόν	κωμῳδώ	κωμῳδούς
Gen.	κωμῳδοῦ	κωμῳδοῖν	κωμῳδῶν
Dat.	κωμῳδῷ	κωμῳδοῖν	κωμῳδοῖς
ii. *παρθένος 'girl': intermediate paradigm*			
Nom.	παρθένος	παρθένω	παρθένοι
Voc.	παρθένε	παρθένω	παρθένοι
Acc.	παρθένον	παρθένω	παρθένους
Gen.	παρθένου	παρθένοιν	παρθένων
Dat.	παρθένῳ	παρθένοιν	παρθένοις
iii. *ἄνθρωπος 'man': recessive paradigm*			
Nom.	ἄνθρωπος	ἀνθρώπω	ἄνθρωποι
Voc.	ἄνθρωπε	ἀνθρώπω	ἄνθρωποι
Acc.	ἄνθρωπον	ἀνθρώπω	ἀνθρώπους
Gen.	ἀνθρώπου	ἀνθρώποιν	ἀνθρώπων
Dat.	ἀνθρώπῳ	ἀνθρώποιν	ἀνθρώποις

must be remembered that we are using the nominative singular or nominative singular masculine form only as a convenient shorthand for referring to an accentual feature attaching to the stem in question.[33]

2.10 Unaccented words

Some ancient Greek words, called proclitics and enclitics, had no word accent of their own,[34] although they acquired an accent in some contexts within the sentence.[35] Proclitics are small, unemphatic words closely joined in pronunciation to the following word, rather as English *a* or *an*

[33] Further on we shall discuss a refinement of the idea that stems have an accentual feature: that some stems are 'unmarked' for accentuation or, in other terms, contain no underlyingly accented morphemes (pp. 116–23, 128–44).

[34] Some are, however, *written* in isolation with an accent (see Probert 2003: 134, 142–3).

[35] Both proclitics and enclitics receive an accent if followed by an enclitic. A disyllabic enclitic also receives an accent if it follows a word with a penultimate acute. Those proclitics that are written in isolation with an accent (e.g. *περί*) are also written with an accent within the sentence, but in most contexts this written accent is merely conventional (see Probert 2003: 133–42).

normally has no accent of its own but belongs closely with the following accented word (*a banána, an ápple*). Enclitics are small, unemphatic words closely joined in pronunciation not to the following but to the preceding word.

Under some circumstances an enclitic affected the accentuation of the word it followed. Words that have a final acute when written in isolation but are normally written with a final grave within the sentence (see p. 58) keep their final acute if the following word is an enclitic. Thus, *Ζεύς* 'Zeus' keeps its final acute accent when followed by the enclitic *τε* 'and': *Ζεύς τε*.

For some combinations of accented word and following enclitic, the enclitic causes the preceding word to acquire a second accent on its final syllable. Thus, a word accented on the antepenultimate syllable acquires a further acute accent on its final syllable before an enclitic: *Ἀρκεσίλαός τε* 'and Arcesilaus'. The same is true for a word with a circumflex on its penultimate syllable, as long as its final syllable does not end in a consonant cluster: *εἶπόν τινι* 'I said to somebody . . . '.[36]

2.11 The accentuation of dialects other than the Koine

Most of the accentual information at our disposal relates to the accentuation of the Hellenistic Koine based on Attic and spoken by the Alexandrian grammarians. However, the ancient grammarians mention accentual peculiarities of various other dialects, in particular 'Doric' and 'Aeolic' (by which Lesbian in particular is probably meant); in addition some papyrus texts of poetry written in literary Doric or literary Lesbian are marked with dialect accents in accordance with the precepts of the grammarians. Accentuations peculiar to Attic (as distinct from the Attic-based Koine), and more rarely to Ionic or Boeotian, also appear in the grammatical tradition. Some further information on Boeotian accentuation can be deduced, though with considerable difficulties and uncertainty, from a papyrus containing fragments of two poems by the Boeotian poetess Corinna. Information on the accentuation of other dialects than those just mentioned does not appear in the ancient sources, but in modern times Chadwick (1992) has drawn some conclusions about Thessalian accentuation from other Thessalian

[36] A full treatment of proclitics and enclitics lies outside the scope of this book. For an introduction to the rules for the accentuation of word groups involving proclitics or enclitics, with further bibliography, see Probert (2003: 133–57). Devine and Stephens (1994: 353–75) have discussed the phonetic characteristics of such word groups with particular attention to the evidence of the musical fragments. W. S. Allen (1973: 240–4, 248–51), Steriade (1988: 283–301), Sauzet (1989: 97–100), and Golston (1990) have discussed the theoretical problems raised by the various rules governing the accentuation of groups involving enclitics.

linguistic characteristics. A further type of heterogeneity that does appear in our ancient evidence concerns the special accentuation of certain words in Homer, differently from the accentuation of the same or similarly formed words in the Koine (see pp. 80–1).

It is not clear how the Alexandrian grammarians knew about the accentuation of dialects other than their own. In principle it is possible either that their information came from dialect speakers of their day or that it derived from an oral tradition of performing or reading aloud the poetry of authors such as Sappho or Alcman. For the special accentuation of Homer the first possibility does not, of course, arise.

The various indications that the accentuation of Greek was not uniform over all times and places conform, of course, to what one might have expected on general typological grounds: complex accentual systems (such as, for example, that of English) tend to undergo change over time and to be subject to dialectal variation. However, the existence of chronological and dialect differences in our accentual information raises a question. How much of our information on accentuation that does *not* explicitly relate to dialects other than Hellenistic Koine can we take to be therefore representative of the accentuation of the Koine? To what extent, or with what restrictions, can we assume that, barring certain special pieces of information on the accentuation of other varieties, our sources present us with a chronologically and dialectally fairly consistent accentual system? In the following sections we first survey the most salient information available for the accentuation of Doric, 'Aeolic', Boeotian, and Thessalian, and then return to the question of the extent and consistency of our evidence for the accentuation of Hellenistic Koine.

2.11.1 Doric accentuation

The most important pieces of information we have on Doric accentuation are the following.[37]

(*a*) Some Doric words with a long accented vowel in the penultimate syllable and a short vowel in the final syllable had an acute, not a circumflex, on the penultimate, e.g. *παίδες* 'children' (not *παῖδες*), *αἴγες* 'goats' (not *αἶγες*), *φώτες* 'men' (not *φῶτες*). In other words, the *σωτῆρα* rule did not apply in Doric.[38]

[37] For statements of grammarians relating to the accentuation of Doric, see Ahrens (1839–43: ii. 26–35); for papyri with Doric accents, Nöthiger (1971: 83–6).

[38] It is not entirely clear whether an accent on a penultimate syllable was *always* an acute in Doric (as apparently suggested by Choer. Th. 1. 386. 11–15; cf. Choer. Th. 2. 158. 35–159. 2, with Hilgard's addition of *πολλάκις*), or whether some words with a long accented vowel in the penultimate syllable and a short vowel in the final syllable had a circumflex (as suggested by the occurrence of forms such as *φᾶρος* on papyri with 'Doric' accents); cf. Probert (2003: 160–1).

(*b*) Doric nominative plural forms in *-οι* and *-αι*, including participles in *-μενοι* and *-μεναι*, had the accent on the penultimate syllable where the Koine had a recessive accent: *φιλοσόφοι* for *φιλόσοφοι*. It is likely that Doric speakers thought of final *-οι* and *-αι* as counting 'long' for accentuation in nominative plural forms (cf. p. 61).

(*c*) Third plural past indicative forms ending in *-αν* or *-ον* had an acute on the penultimate syllable: *ἐδώκαν* 'they gave' (classical Attic *ἔδοσαν*), *ἐλέγον* 'they said' (Attic *ἔλεγον*).[39]

2.11.2 'Aeolic' accentuation

Grammatical sources inform us that all words in 'Aeolic', except for prepositions and conjunctions, were recessive. Papyri of Lesbian authors with 'Aeolic' accents apply a general rule of recessive accentuation but treat proclitic and enclitic words in the same way as in the Koine.[40]

The consistent recessive accentuation of 'Aeolic' is an innovation in that dialect, and it would be of interest for the general history of Greek accentuation (and Greek dialectology) to know when 'Aeolic' began to diverge in this way from the other dialects. Evidence on this question is limited, but Wackernagel (1914*b*) argues that some instances of 'Aeolic' recessive accentuation are preserved for certain Aeolic words in the transmission of the Homeric text (cf. pp. 80–1). If so, the Aeolic recessive accent rule would reach back to a fairly early stage in the Homeric tradition. Some independent evidence for an early dating of Aeolic recessive accentuation is produced by West (1970*a*: 195), who argues on the basis of systematic exceptions to the recessive accent rule in papyri with 'Aeolic' accents that the rule had ceased to apply to new word-forms before certain linguistic developments took place. These include the formation of the third person plural imperative ending *-οντον* (regularly accented *-όντον* in papyri) and the fixation of *οὐδάμα*

[39] These 3rd person pl. past indicative endings derive from prehistoric **-ant* and **-ont*, so that possibly the Doric accentuation of these forms is a relic from the time when they ended in a consonant cluster (cf. part (*c*) of the law of limitation as stated on p. 60). So Ahrens (1839–43: ii. 28–9); Misteli (1868: 111–12). But cf. Lucidi (1966: 80).

[40] For the statements of grammarians relating to the accentuation of 'Aeolic', see Ahrens (1839–43: i. 10–19); Meister (1882–9: i. 31–8). For papyri with Aeolic accents, see Hamm (1958: 42–4). For the treatment of proclitic and enclitic words see, for example, the beginning of *P. Oxy.* x. 1234 fr. 3 line 12 (= Alcaeus fr. 73. 12 V.), *αἰκάιτις = αἰ καί τις*. The lack of accent on the proclitic *αἰ* is marked, as often, with a grave accent, while the accent on *καί* induced by the following enclitic *τις* is marked with the acute. Cf. the beginning of *P. Oxy.* x. 1233 fr. 8 line 10 (= Alcaeus fr. 39a. 10 V.), *]cπὰραμοιρανδιος =]s παρὰ μοῖραν Δίος*. Here the grave accent on the first syllable of *παρά* serves as a reminder not to apply the Aeolic recessive accent rule to this proclitic word. However, not all words that were enclitic in the Koine were enclitic in Lesbian: see Ahrens (1839–43: i. 17–18); Hamm (1958: 44); Probert (2003: 159).

'never', *μηδάμα* 'never', *μηκέτι* 'no longer', and *μηδένα* 'nobody' (acc.) as single words. Since these developments appear to have preceded the time of Sappho and Alcaeus, the lifetime of these poets (seventh to sixth centuries BC) gives West a *terminus ante quem* for the 'Aeolic' recessive accent rule.

2.11.3 Boeotian accentuation

Boeotian is a dialect of the Aeolic group, closely related to Lesbian and Thessalian. Grammarians tell us little about its accentuation, but occasional comments on the accentuation of particular words suggest that Boeotian accentuation is not substantially different from that of the Koine, and in particular that it does not share the Lesbian generalization of recessive accentuation.[41]

Evidence for some significant deviation from the accentuation of the Koine comes, however, from the partially accented 'Berlin papyrus' of Corinna (for which see Wilamowitz 1907). On the whole, the accents are those one would expect to find in an Attic or Koine text, but there are some discrepancies whose interpretation has been disputed. For example, *μώ̣ση* 'muses' (nom. pl. at i. 19 = Corinna fr. 1(a) col. i, line 19 Page) is the equivalent of Attic *μοῦσαι*, the diphthong *-αι* having become in Boeotian a long vowel written with *-η*. The acute on *μώ̣ση* is capable of at least three (not mutually exclusive) interpretations. It could be that the Boeotian nominative plural ending *-η* counted as 'long' for accentuation, unlike its Attic equivalent *-αι*; it could be that the *σωτῆρα* rule did not apply in Boeotian; or it could be that a scribe wrote an acute under the influence of his knowledge of the Koine, where a final *-η* never counted 'short' for accentuation.[42]

2.11.4 Thessalian accentuation

Our knowledge of the Thessalian accent is based almost exclusively on indirect evidence from inscriptions. These reveal that in Thessalian, uniquely among Greek dialects, many vowels were lost or changed quality. These developments in Thessalian are typical of languages with a stress accent and have led to speculation that Thessalian, unlike the other Greek dialects, had indeed given up the pitch accent found in the other dialects and replaced it with a stress accent.

[41] See Ahrens (1839–43: i. 166–8); Meister (1882–9: i. 213–14 with 214 n. 1). One of the clearest statements is that at Arc. 106. 10–12: *καὶ οἱ Βοιωτοὶ τὸ Η τῶν εἰς ΗΣ εἰς ΕΙ τρέποντες ὀξύνουσιν αὐτά· εὐγενεί̑ς ἀντὶ εὐγενῆς, ἀγενεί̑ς ἀντὶ ἀγενῆς* 'and the Boeotians, turning the *η* of the words in *-ης* into *ει*, give them a final acute: *εὐγενεί̑ς* for *εὐγενῆς*, *ἀγενεί̑ς* for *ἀγενῆς*'.

[42] For further information and discussion see Wilamowitz (1907: 42–4); E. Hermann (1918); Bonfante (1934); Levin (1989).

Chadwick (1992) argues specifically that the Thessalian stress accent normally fell on the initial syllable, since Thessalian vowel change and loss is not normally found in initial syllables, and there are one or two examples where the vowel of an initial syllable, far from being lost, has been lengthened. He suggests that unstressed syllables underwent processes of vowel change or loss while vowel lengthening took place in initial syllables under the influence of the accent.

If Chadwick's conclusions are correct, of the ancient Greek dialects for which we have evidence on accentuation Thessalian is the only one to have abandoned the law of limitation. Lesbian and Boeotian, the two dialects most closely related to Thessalian, both retained the law of limitation; this innovation would therefore be one characterizing Thessalian alone.

2.12 Extent and consistency of our information on the accentuation of Hellenistic Koine

I have asserted (p. 70) that most of our information on ancient Greek accentuation relates particularly to the Hellenistic Koine spoken by the Alexandrian grammarians. In the present section, we shall delve into the reasons for regarding this conclusion as essentially correct, and the limits within which it can be maintained.

The grammarians whose statements on accentuation survive give the impression that they consider themselves to be describing, for the most part, not the accentuation of a particular variety of Greek but something they regard as simply the normal or standard accentuation of Greek—Greek accentuation *par excellence*. Some varieties of Greek diverge from this 'normal' standard in the accentuation of particular words or classes of words; 'Aeolic' is exceptional (among the dialects with whose accentuation the grammarians concern themselves) in the *extent* of its deviation from the 'normal'. In other words, the grammarians and the accented texts furnish us, in effect, with a list of Greek dictionary entries and their accents, plus a set of 'normal' rules for accenting inflected forms and connected speech. Occasionally, we are told that a particular variety of Greek deviated from the 'normal' either in the accentuation of certain words or in the application of certain rules. We are, I think, intended to infer that 'normal' accentuation generally applied wherever no deviation from the 'normal' is expressly signalled.

Some grammatical passages will serve to illustrate the grammarians' concept of the 'normal', and of deviation from the 'normal'. The following remark from Arcadius on the Attic accentuation of *πονηρός/πόνηρος* 'base' and of *μοχθηρός/μόχθηρος* 'wretched' is typical of comments on the accentuation of a word in a particular dialect, here Attic:

τὰ μέντοι διὰ τοῦ ΗΡΟΣ ὑπὲρ δύο συλλαβὰς ἐπιθετικὰ ἔχοντα κατ' ἰδίαν θηλυκὰ ὀξύνεται· λαπηρός ἀταρτηρός τυχηρός ὀλισθηρός. ἰστέον δέ, ὅτι τὸ πόνηρος καὶ μόχθηρος [ἀει] οἱ Ἀττικοὶ ἀντὶ τοῦ ὀξύνειν προπαροξύνουσιν, ὅταν τὸν ἐπίπονον[43] *καὶ ἐπίμοχθον σημαίνῃ.* (Arc. 81. 15–20)

But adjectives in *-ηρος* with more than two syllables and having a separate feminine form have a final acute: *λαπηρός ἀταρτηρός τυχηρός ὀλισθηρός*. But one must know that the Attic speakers [always] give *πόνηρος* and *μόχθηρος* an antepenultimate acute instead of a final acute when these words refer to a 'laborious' and 'toilsome' person.

We are given here a general rule for a class of adjectives, followed by the statement that two words, when they have certain meanings, are exceptions to the rule in Attic. We are left to infer that the words are exceptions *specifically* in Attic—that 'normally' they follow the rule. We are also left to infer that other words covered by the rule are accented on the final syllable in Attic, just as 'normally'. No word for 'normally' appears in the context, but we need to understand some standard of normality against which the Attic peculiarities are seen as deviations.

Arcadius on *μωρός/μῶρος* is marginally more explicit:

τὰ μέντοι ἐπιθετικὰ ὀξύνεται· χλωρός βλωρός (ὁ ὑπόλευκος) ζωρός (ὁ μικρός [?][44]*) μωρός καὶ μῶρος ἀττικῶς.* (Arc. 79. 10–12)

But the adjectives [in *-ρος*, with two syllables and *-ω-* in the penultimate syllable] have a final acute: *χλωρός*, *βλωρός* ('whitish'), *ζωρός* ('small' [?]), *μωρός*, and in Attic *μῶρος*.

We are again presented with a rule to which Attic has an exception. This time, however, the 'normal' accentuation of the word *μωρός/μῶρος* 'stupid' is explicitly given as well as the Attic variant. Again, however, we are left to infer that other words follow the general rule in Attic just as 'normally', and again we need to assume a standard of normality beside which the Attic accentuation of *μῶρος* is seen as exceptional.

[43] The MSS of Arcadius as reported by Schmidt read *ἐπίμονον* ('persisting') here. Chandler (1862: 120) and Lentz (1867–70: i. 197. 20) correct to *ἐπίπονον*, aptly comparing the parallel passages at Eust. 341. 14 and Ammonius 405 (cf. also Ammonius 326). Donald Russell draws my attention also to Philo Judaeus, *De posteritate Caini* 94–5: *τὰ καματηρὰ καὶ ἐπίπονα, ἅπερ Ἀττικοὶ τὴν πρώτην ὀξυτονοῦντες συλλαβὴν καλοῦσι πόνηρα* 'wearisome and toilsome things, which Attic speakers call *πόνηρα*, giving the word an acute on the first syllable'.

[44] *μικρός* 'small' is a curious gloss for a word that otherwise means 'unmixed'. Just conceivably it is correct, perhaps because a quantity of drink occupies less space when unmixed than the same quantity diluted, or because undiluted wine might be consumed in small quantities. Richard Hewitt tells me there is no evidence for shot glasses and the like in classical antiquity, but points out that in a number of languages diminutives and words for 'small' appear in expressions for strong drink without particularly implying small quantity.

Some passages provide a more definite indication of the point of reference, the 'standard of normality', whose implicit existence we have been noticing:

τὸ δὲ λάβε καὶ ἴδε παρ' ἡμῖν μὲν βαρύνονται, παρὰ δὲ Ἀττικοῖς ὀξύνονται. (Arc. 170. 16–17)

λάβε and ἴδε are accented non-finally with us but have a final acute among Attic speakers.

Here the Attic accentuation is presented as contrasting with the practice 'with us'. 'With us' in this context can only mean in the Koine used by Herodian or by his sources.[45]

The Koine or 'our' language thus figures from time to time as a variety of Greek with which others are contrasted when a word has different accentuations in different varieties. At other times, an accentual deviation in a certain dialect is noted with no explicit contrast with the Koine but an implicit contrast with some point of reference. Where the Koine (or 'our' language) is explicitly mentioned in the context of a particular accentuation there is virtually always an explicit contrast with some other variety that deviates from the practice of the Koine. In other words, almost no passages note a Koine accentuation as if it were an oddity as compared with some other, implicit, standard of normality.[46] This situation suggests that the grammarians' point of reference is the Koine itself. Nevertheless, our sources present the accentuation they describe not as that of a particular variety of Greek but simply as Greek accentuation. The priority given to the Koine becomes clear only when a particular deviation from Koine practice is noted for some other dialect.

[45] It is tempting to compare passages such as Arc. 106. 16–17, where one form is said to be used 'generally', κοινῶς, whereas another form belongs to a particular dialect: τὰ εἰς ΕΥΣ κοινῶς μὲν ὀξύνεται· βασιλεύς Πηλεύς Τυδεύς· αἰολικῶς δὲ βαρύνεται· Ἄρευς 'Words in -ευς generally have a final acute: βασιλεύς, Πηλεύς, Τυδεύς. But in Aeolic they are recessive: Ἄρευς.' However, since the word κοινῶς as used by Herodian does not mean 'in the Koine' but 'generally' or 'in most Greek dialects' (see Consani 1991: 27–30, largely anticipated by Stephan 1889: 105–26), such passages cannot be adduced as examples of explicit reference to the Koine. Rather, they belong in the same category as passages that assume fairly implicitly a standard of normality against which the accentuations of certain dialects are regarded as deviations. Since, as argued below, the standard of normality for accentuation *is* the Koine, I believe that where κοινῶς appears in a discussion of accentuation the word so labelled is the Koine form. But the reason for thinking so is not that κοινῶς means 'in the Koine', which for Herodian it does not.

[46] I say 'almost' because at Arc. 93. 7 and 208. 16–19 the συνήθεια (Koine) is mentioned as the variety that apparently diverges from what is 'normal'. These passages are highly unusual compared to the number of times that Attic or another non-Koine dialect is treated as divergent, and I suspect either some distortion of Herodian's original statement or some corruption of the text; note that in the first passage mentioned the following sentence contains manifest signs of corruption (see Schmidt ad loc.).

The grammarians' perspective on Greek accentuation may be illuminated through the following analogy. Different dialects of English tend not to differ vastly from one another in the rules governing the placement of word accents, or in the accentuation of individual words. Nevertheless, there are some divergences. It would be possible to produce an account of English accentuation that sought to give the most widely applicable rules of accentuation and, for each individual word, the most widely used accent. Deviations occurring in particular varieties of English would on occasion be highlighted. An account of English accentuation constructed on such a principle would describe no dialect in particular but would collect the most widely used rules and individual word accents. In using such a description to stress correctly a word in a particular dialect, one would have to assume that 'normal' stress applied unless a relevant exception had been noted for that dialect. In practice, however, accounts of English accentuation (or English pronunciation in general) are not constructed on a principle of giving priority to the most widely used rules and word accents. Rather, an account that seeks to provide information about more than one variety of English is likely to give priority to one particular variety—typically one that the author regards as standard or correct—noting the usages of other dialects only when they disagree with this variety. Palmer, Martin, and Blandford's *Dictionary of English Pronunciation with American Variants* (1926) is constructed on such a principle. The pages are divided into three columns, the first giving words in their orthographic forms, the second giving in phonetic transcription the pronunciations typical of speakers of Received Pronunciation, and the third giving pronunciations widely used in educated American English. The third column is left empty wherever the Received Pronunciation form is typical of educated American as well as British speakers. Received Pronunciation thus provides a sort of standard against which American forms that differ from those of Received Pronunciation are regarded as 'variants'; the authors also suggest that one day a new edition or similar dictionary might include a further column for Scottish variants (Palmer, Martin, and Blandford 1926: p. xiii). There was no inherent linguistic (rather than cultural) reason why Received Pronunciation was chosen as the standard of normality. As the authors noted (p. xiv), 'From the point of view of certain Americans, the procedure might be reversed, as "Take a typical Briton; hear him pronounce each word, and whenever his pronunciation makes you laugh, write down his pronunciation in the column reserved for Briticisms."'[47]

[47] The authors take pains to explain that their procedure was not in fact based on the pronunciation of a single speaker of each dialect (see Palmer, Martin, and Blandford 1926: pp. xiii–xx). For our purposes, however, the particular procedure used to arrive at 'Received Pronunciation' and 'American' forms is of little relevance.

An analogy should not be pressed too far, but the statements of ancient grammarians on accentuation suggest that the Koine occupied for them a position not altogether dissimilar to that which Received Pronunciation held for the authors of the *Dictionary of English Pronunciation with American Variants*. It is perhaps surprising that the Greek grammarians' point of reference was provided by the Koine rather than by Attic. In other words, despite the prestige attached to classical Attic in some circles during the Roman period, the surviving discussions of accentuation do not attach particular value or importance to Attic. Indeed, from time to time an Attic variant is noted with a value judgement to suggest that it appeared to the grammarians not quite right:

τὰ εἰς ΒΟΣ κύρια ἢ προσηγορικὰ ὑπὲρ δύο συλλαβὰς προπαροξύνεται· ἄραβος κόναβος ἴαμβος κάραβος σάραβος ἀττέλαβος, ὅπερ οἱ Ἀττικοὶ παραλόγως ὀξύνουσι. (Arc. 51. 1–4)

Proper and common nouns in *-βος* with more than two syllables have an antepenultimate acute: *ἄραβος*, *κόναβος*, *ἴαμβος*, *κάραβος*, *σάραβος*. And *ἀττέλαβος*, to which speakers of Attic irregularly give a final acute.

πηρόν {θέσαν}· ὡς χρηστὸν κατ' ὀξεῖαν τάσιν παρὰ τῷ ποιητῇ. παρὰ δὲ τοῖς Ἀττικοῖς πῆρον ὡς λῆρον. ὑγιεστέρα δὲ ἡ παρὰ τῷ ποιητῇ ἀνάγνωσις, ἐπεὶ τὰ εἰς ος λήγοντα δισύλλαβα, εἰ ἔχοι τὴν πρώτην συλλαβὴν ἔχουσαν τὸ π̄ καὶ τὸ η̄, ὀξύνονται, οἷον "πηός", πηλός. οὕτως καὶ πηρός. (Sch. *Il.* 2. 599b (A))

πηρόν {θέσαν}: accented like *χρηστόν*, with a final acute, in the poet [Homer]. But among the speakers of Attic it is *πῆρον*, like *λῆρον*. But the poet's reading is sounder, since disyllables ending in *-ος*, if they have *π* and *η* in the first syllable, have a final acute, like *πηός*, *πηλός*. So too *πηρός*.

τὰ δὲ διὰ τοῦ ΟΙΟΣ ὀνόματα ὑπὲρ δύο συλλαβὰς ἅπαντα προπερισπᾶται· οἷον, παντοῖος, ἀλλοῖος, ἑτεροῖος· οἱ δὲ μεταγενέστεροι τῶν Ἀττικῶν τὸ γελοῖος καὶ ὁμοῖος προπαροξύνουσιν· οὐκ εὖ. (*EM* 224. 40–4)

Words in *-οιος* of more than two syllables all have a penultimate circumflex. For example, *παντοῖος*, *ἀλλοῖος*, *ἑτεροῖος*. But the later speakers of Attic give *γελοῖος* and *ὁμοῖος* an antepenultimate acute. That is not good.[48]

The general impression we gain, then, from the extant statements of ancient grammarians on accentuation is that the accentuation of the Koine was regarded as 'normal'. However, the character of specific deviations from 'normal' accentuation that the grammarians note for Attic, Ionic, Doric, and (occasionally) Boeotian suggest that these dialects for the most part shared the accentual system of the Koine. 'Aeolic' is the only dialect about which the grammatical tradition records a

[48] Further examples at Choer. Th. 1. 167. 31–168. 4 and Io. Al. 15. 35–16. 3. In the latter passage *οὐδὲ ὄντως*, printed by Dindorf and taken over by Lentz (1867–70: i. 423. 9), needs to be corrected to *οὐ δεόντως*; for another example of the same corruption, see Sch. *Il.* 15. 607a (A) with Erbse's apparatus.

fundamental difference in the accentual rules affecting the position of the accent in a large number of words (see p. 72). Doric lacked the *σωτῆρα* rule (see p. 71), but this idiosyncrasy did not affect the syllable on which the accent fell. Cases where we are told that the accent fell on a different syllable in Doric from the syllable on which it fell in the Koine are largely confined to those listed under (*b*) and (*c*) in section 2.11.1 above. In addition, the grammarians note occasional Doric idiosyncrasies in the accentuation of individual words or small classes of words.[49]

It follows from these conclusions that the accents of ancient Greek words that are handed down to us without specific information as to dialect should normally be assumed to relate in the first instance to the accentuation of Hellenistic Koine. With less certainty in individual cases because there may always be gaps in our information, but again as a general principle, we should assume that the Attic, Ionic, and Doric known to the grammatical tradition accented a word on the same syllable as did the Koine unless we have specific information to the contrary.

At this point, however, we must recall that some of the ancient Greek words transmitted with an accent were not in use in the Koine. Many of our texts of classical and pre-classical authors, transmitted with accent marks, are composed in a literary Ionic and contain words that existed in Ionic but not in Attic or the Koine. Similarly, Doric elements, including some specifically Doric word-forms, appear for example in Pindar and in the lyric parts of tragedy. The Homeric poems, again, come down to us in a language containing words that are specifically Ionic as well as others that are specifically Aeolic, and yet others whose provenance is unclear. In none of these cases do we have texts for which a clear attempt to mark dialect accents has been made; there is nothing analogous to the papyri with 'dialect' accents whose existence we noted for certain Doric and 'Aeolic' authors (p. 70). The grammatical tradition on the accentuation of, for example, Herodotus, Pindar, or Homer, is not kept discrete from the tradition on the accentuation of texts in Attic or Koine. Occasionally, a divergence from the accentuation of the Koine is noted, but in the main these authors are treated as employing the 'normal' accentuation of ancient Greek. In very many cases, we do not know whether a word unlikely to have been in use in Hellenistic Koine was accented by extrapolation from the patterns of accentuation found in the Koine or whether there was some knowledge of the pronunciation of the word by speakers of the relevant dialect, or again whether there was appeal to a tradition of performing or reading aloud the text in question (cf. Wackernagel 1893: 38).

[49] See, for example, Apollonius Dyscolus, *Adv.* 169. 22–4.

What is important in this context is that in most cases the general level of dialectal consistency in the ancient Greek accentuation transmitted to us is not affected very greatly by the question as to how non-Koine words derive their traditional accent. If an accent is assigned by extrapolation from the accentuation of Hellenistic Koine, it obviously has some validity as evidence for the accentual system of the Koine, just as the way a speaker of English instinctively pronounces a word he has never heard before can provide some evidence for his own system of accentual rules. On the other hand, if a word is accented on the basis of some genuine knowledge about the contemporary accentuation of the dialect in question, then in most cases the evidence for a high level of accentual uniformity across dialects means that again we have an accent assigned by a system of rules very similar to those of the Koine.

There are two possible sorts of exception to this general, and rough, principle of consistency in our accentual information. Both relate to the possibility that some Homeric words are accented on the basis of an oral tradition that may preserve some elements of high antiquity. As we have seen (pp. 33–45), words to which this possibility may apply have been identified by the irregularity of their accentuation from the point of view of the Koine. Thus, *δηϊοτήϛ* and *ἀνδροτήϛ* are candidates for accentuation on the basis of ancient tradition precisely because their accentuation does not conform to that of *-οτηϛ* words in the Koine (i.e. accentuation *-ότηϛ*). If the conclusion that some Homeric words derive their accents from such a tradition is correct, then clearly that tradition may preserve some accentuations that pre-date certain of the accentual regularities of the Hellenistic Koine. Indeed, it is only in such cases that we have any hope of surmising that an accent has been assigned on the basis of ancient tradition. The number of words to which this consideration is likely to apply is by any account very small, but it introduces the possibility of some chronological inconsistency into our data for the 'normal' (as opposed to specifically 'dialect') accentuation of ancient Greek.

The second type of inconsistency that may exist in the accentual tradition of Homer is dialectal rather than chronological. Because the dialectally heterogeneous Homeric vocabulary clearly includes an Aeolic component, if any of the Aeolic words in Homer are transmitted with 'Aeolic' recessive accentuation, our evidence for Homeric accentuation would be dialectally as well as chronologically heterogeneous. Since 'Aeolic' accentuation, with its consistent assignment of recessive accents, is fundamentally different from that of the Koine, the presence of 'Aeolic' accents in Homer would affect the level of dialectal consistency rather more than would the presence of specifically Ionic accents for Ionic words. In many cases, the accent transmitted for an Aeolic word in Homer is quite clearly not an 'Aeolic' accent, because it is not

recessive. For example, Homeric θεᾱ́ 'goddess' (e.g. *Il.* 1. 1) is a form of Aeolic origin corresponding to Ionic and Attic θεός (f.); θεᾱ́ reappears, alongside θεός (f.), in the Koine. The transmitted accent is that of the Koine equivalent θεός or θεᾱ́, not the accent that would follow the 'Aeolic' rule. Another example is Homeric ἀργεννός 'white' (e.g. *Il.* 6. 424), a word transmitted in an Aeolic form (with -εννός rather than -εινός) apart from its accent, which again follows the usual rules for adjectives in -νος obtaining in the Koine (cf. Ch. 8).[50] In some cases, however, Wackernagel (1914*b*) has argued that a recessive accent transmitted for an Aeolic word in Homer preserves the word's original Aeolic accentuation. For example, the third-declension genitive singular υἷος and dative singular υἷϊ of υἱός 'son' are transmitted with recessive accentuation in violation of the general rule that third-declension nouns with monosyllabic stems have mobile accentuation (cf. p. 65). As Wackernagel (1914*b*: 101) suggests, the recessive accentuation transmitted for these forms may be a relic of their Aeolic origins.[51] Again the instances to which this possibility may apply are certainly rare, but they would introduce some further heterogeneity in the accentuation of our Homeric words.

[50] For these and other examples, see Wackernagel (1914*b*: 99–100).

[51] Instances such as this, where the grammarians were (as far as we know) unaware of a form's Aeolic provenance, need to be distinguished from cases where the grammatical tradition assigned a recessive accent to a word because the word was known, or at least thought, to be of Aeolic origin (see Wackernagel 1914*b*: 98–9). It is very likely that in some cases the grammarians' view that Aeolic words should have an Aeolic accent influenced the traditional accentuation of a word. The extent to which this happened should, however, not be exaggerated. In most of the cases where the Aeolic provenance of a Homeric word is mentioned in the grammatical tradition to justify its recessive accentuation, the Aeolic provenance is adduced as if in support of a traditional accentuation rather than as an *a priori* argument for a recessive accent. See for example the Herodianic scholion Sch. *Il.* 10. 67b (A), which begins by stating that the infinitive ἐγρήγορθαι 'to stay awake' is accented recessively but then observes that this accentuation cannot be justified by any rules. The scholiast (or rather Herodian, in the first person) continues to say that the only justification for recessive accentuation he can see is that infinitives ending in -θαι and with -ορ- preceding are found in no other dialect than Aeolic. The recessive accent of the word is here taken as given and the Aeolic appearance of the word adduced merely to explain why the accent is recessive, not to establish the recessive accent in the first place. Wackernagel (1914*b*: 98–9) argues that ἐγρήγορθαι may well not be a genuine Aeolic form in origin, in which case, according to Wackernagel, the recessive accent prescribed by Herodian would be based on a false notion of the word's Aeolic provenance. Whatever the origins of the form, however, the wording of the scholion strongly suggests that the recessive accent pre-dates Herodian. Further support for the thesis that the grammatical tradition does not on the whole use the Aeolic provenance of a word in order to establish (as opposed to explain) its accentuation comes from instances in which it is noted that an Aeolic form *ought* to be accented recessively but traditionally is not: see, for example, Sch. *Od.* 12. 313 (H).

To sum up, the information we have on the accentuation of ancient Greek, where it is not specifically related to the accentuation of a dialect other than the Koine, mostly applies to the accentuation of the Koine or is extrapolated from the accentuation of the Koine. Our evidence suggests that the Attic, Ionic, Doric, and Boeotian dialects in most cases accented words on the same syllable as the Koine. In cases, therefore, where words specific to those dialects are accented on the basis of some genuine knowledge of pronunciation of the relevant dialects rather than on the basis of the Koine, the general accentual uniformity of our information is unlikely to be affected very much by the presence of words of various dialects. The only serious inconsistencies in our evidence are likely to relate to the accentuation of Homer, where a small number of words may be transmitted with exceptionally archaic accents or with Aeolic recessive accents.

Some differences between the accentual systems of the various varieties of Greek are, as we have seen, noted by our sources. There will certainly be gaps in our knowledge of these differences, but the evidence for a high level of accentual uniformity between the dialects obliges us to assume, as a working principle, that there was uniformity except in the specific cases where we know that there was not: in other words, that the accentual information at our disposal is representative of a relatively coherent linguistic system except where grammarians inform us about relevant differences between varieties and except where, with some caution, we suspect chronological or dialectal inconsistencies in the traditional accentuation of Homer.

3 CONTINUITY AND CHANGE IN GREEK ACCENTUATION

> It is remarkable that we accent Homer and Hesiod, Lascaris and Gaza in substantially the same way; which is tacitly to assume that no material change in pronunciation took place for the space of more than two thousand years. If true, this is an interesting fact.
>
> Chandler (1881), p. v

3.1 Introduction

Our evidence for ancient Greek accentuation is tantalizingly achronological. As we have seen, the grammatical tradition relating to the ancient Greek accent has its roots in Hellenistic Alexandria, with occasional elements of possibly much higher antiquity. The tradition is essentially fixed by the second century AD. Several centuries separate Aristophanes of Byzantium from Herodian, yet we have little guidance as to changes in accentuation that may have occurred over that period. Furthermore, as Scheller (1951: 8) has well observed, the whole period preceding Aristophanes of Byzantium is for Greek accentuation a period of prehistory: for no time during this period do we have direct access to the state of the accent system. It is therefore essential to consider whether we are in a position to treat ancient Greek accentuation from a diachronic perspective at all.

In what follows I hope to show that despite the lack of direct evidence for Greek accentuation in our period of 'prehistory', certain deductions may be made; these point to continuity in certain areas and change in others. We shall begin by surveying the evidence for continuity between the accentuation systems of certain periods and those of others, and then consider the indications of some salient diachronic changes.

3.2 Continuity

Correspondences between the position of the accent in 'ancient Greek', as we know it from our Hellenistic and post-Hellenistic sources, and that in other Indo-European languages, especially Vedic Sanskrit, show beyond reasonable doubt that some features of our ancient Greek accent system are extremely old. We have already observed (p. 26), for example, the parallel movement of the accent between root and ending in the paradigm of the Greek word for 'foot' and in its Vedic cognate,

and the parallel accentuation of the numbers from five to ten in Greek and Vedic. As noted already (p. 26), the incidence and often systematic character of such correspondences demonstrate that for many words the position of the Greek accent has remained the same from late Indo-European until the Hellenistic period. It should follow *a fortiori* that these words were accented on the same syllable at intervening periods such as the time of Homer or that of Sophocles, or at least that they were so accented at intervening periods in Attic, the dialect that was primarily ancestral to the Koine. Since, moreover, the occasional grammarians' comments we have on Ionic accentuation suggest that in most respects Attic and Ionic had not diverged in their accentuation by the Hellenistic period, we may assume that during the archaic and classical periods many words were already accented both in Ionic and in Attic in the same way as they would later be accented in the Koine.

Further evidence for continuity between the accentuation of archaic and classical Greek and that of the Hellenistic period comes from the information we have on the accentuation of dialects other than Attic and the Koine (see § 2.11 above). We have observed that it is not clear what the basis for this information is, whether grammarians' first-hand acquaintance with dialect speakers in the Hellenistic period or some sort of tradition regarding the pronunciation of literary dialects. Even without knowing the source or antiquity of this information, however, we may at least tentatively draw some conclusions from the similarities between the accentuation systems of different dialects at some point in the historical period.

Most saliently, the law of limitation is common to all Greek dialect groups for which we have evidence on accentuation: Attic-Ionic, Doric, and Aeolic.[1] The law of limitation is a Greek innovation: it does not go back to Indo-European. The fact that it is common to the three major dialect groups for which we have accentual information suggests, however, that it is a very early innovation, dating back to a period at which the major dialect groups were not yet differentiated.[2] We may again argue *a fortiori* that the law of limitation applied both to classical Attic and to the language of Homer.

The argument just presented is open to the objection that the law of limitation could conceivably have originated in one dialect and then

[1] If Chadwick (1992) is right to argue that Thessalian had an accent that normally fell on the initial syllable, this Thessalian initial accent was a Thessalian innovation that at least some closely related Aeolic dialects did not share (see p. 74). Chadwick (1992: 2–3) wonders whether the grammarians' references to 'Aeolic' *βαρυτόνησις* must refer to a recessive accent still subject to the law of limitation, but I am convinced that this traditional interpretation of the grammarians is indeed correct for Lesbian.

[2] So also Meier-Brügger (1992: 286).

spread to the others, and this could have happened at any date.[3] However, there is another argument for the antiquity of the law of limitation, due to Wackernagel (1893: 31–3), to which this possibility does not apply. Wackernagel's argument concerns the few exceptions to the law of limitation, mostly words that have undergone quantitative metathesis, a sound change in which the quantities of a long vowel followed immediately by a short vowel were reversed in Attic and Ionic. These include, for example, *i*-stem genitives singular such as *πόλεως* 'city' (gen. sg.) < *πόληος*.[4] The older form *πόληος* conforms to the law of limitation, but the younger form *πόλεως* does not. Had the law of limitation arisen at a time when quantitative metathesis had already operated, the form *πόλεως* would have been remade to **πολέως*. Since this did not happen, we can conclude that the law of limitation was historically prior to the operation of Attic-Ionic quantitative metathesis.[5]

The fact that quantitative metathesis is common to both Attic and Ionic also suggests that it occurred before those two closely related dialects separated from each other, but again we must reckon with the possibility of influence from one dialect to the other after they separated. As Wackernagel (1893: 32–3) notes, however, there are instances

[3] Salmons (1992: 25–73) suggests that accentual systems are particularly likely to be affected by at least certain types of language contact.

[4] The same accentual anomaly applies to certain words that have not undergone quantitative metathesis but have been influenced by words that have, e.g. *i*-stem gen. pl. forms such as *πόλεων*, which always had a long vowel in the final syllable but have followed the accentuation of the gen. sg.

[5] The account given here is based on the traditional view of quantitative metathesis as involving an exchange of vowel quantities. It is, however, striking that forms such as *πόλεως* were not reaccented after quantitative metathesis, given the strictness with which the law of limitation continued to apply elsewhere and which would lead one to suppose that the law remained part of the synchronic grammar of the language. A possible way out of this difficulty would be to accept Méndez Dosuna's (1993) arguments—anticipated in part by others (see Méndez Dosuna 1993: 99)—for regarding the result of quantitative metathesis as involving a glide followed by a long vowel (i.e. *πόλεως* would be a disyllabic form, *πόλε̯ως*). In this case, forms such as *πόλεως* would not argue for the antiquity of the law of limitation. But forms such as *βασιλέως* 'king' (gen. sg.) < *βασιλῆος*, in which the *-ε-* resulting from quantitative metathesis carries the accent, make it difficult to accept the view that this *-ε-* was an unaccentable glide. Méndez Dosuna (1993: 124 n. 64) suggests that the accent of *βασιλέως* is due to analogy on the nominative *βασιλεύς* (in his view standing for *-éu̯s*) or to a secondary change of *ε̯ω* to *εω* with a shift of accent, but neither of these suggestions is really satisfactory. As regards analogy on the nominative, such an analogy would have to be purely graphic unless a secondary change of *ε̯ω* to *εω* is *also* envisaged; furthermore, the *-εύς* of *βασιλεύς* does *not* stand for *-éu̯s* (cf. the contrast *Zεύς* = *zdeús* versus *Zεῦ* = *zdéu*). The notion of a secondary change of *ε̯ω* to *εω* with a shift of accent (which *could* be motivated by the other forms in the paradigm with accent on the third syllable from the beginning) is superficially attractive, but makes it difficult to see why a form such as *πόλεως* should not also have undergone the same change *ε̯ω* to *εω* and then also received a regular accent, in this case one conforming to the law of limitation.

of (metrically guaranteed) $\epsilon\omega < *\eta o$ in the Homeric poems, beside instances of retained ηo, and therefore Attic-Ionic quantitative metathesis operated before the Homeric poems reached something like the form in which we have them. This point clinches the argument that quantitative metathesis, and therefore the law of limitation, operated at a pre-classical period.

We may now summarize the arguments for regarding the Hellenistic system of Greek accentuation as being broadly the same as that of Attic and Ionic Greek in the Homeric and classical periods. Firstly, correspondences with Vedic Sanskrit suggest that in many words the accent has remained in the same position since late Indo-European. Secondly, the most important innovation of Greek, namely the law of limitation, goes back to pre-classical and almost certainly to pre-dialectal times.

Looking forward in time, we have noted that where an ancient Greek word has survived into modern Greek, the position of the accent has largely remained unchanged (p. 26). Because of the influence of the ancient language on the modern, we cannot in all cases assume that the accent has simply remained unchanged during the intermediate periods (cf. p. 51). However, our evidence for medieval Greek accentuation suggests that divergences from the Hellenistic system were not very great; in most cases the changes that have occurred foreshadow the developments reflected in the modern language.

Not all features of modern Greek accentuation go back to the Hellenistic system (cf. Ch. 1 n. 34, p. 32 with n. 45, p. 51), and we cannot expect that all features of the Hellenistic system go back to Indo-European, or even to Homeric times. The next section surveys some of the most far-reaching changes that occurred in the prehistory of the Greek accentuation system within Greek itself.

3.3 Greek innovations

It is clear that the Indo-European parent language, of which Greek is a descendant, had a free accent (see pp. 59–60; for some of the evidence for the IE accent see p. 26), and that in many respects this Indo-European system is directly continued by Greek. We have already considered the most important accentual innovation of Greek, the law of limitation. Another is the recessive accentuation of the finite verb: with a few exceptions,[6] Greek finite verb forms are accented as far from the end of the word as the law of limitation allows. Some further

[6] See Probert (2003: 42–8). Vowel contraction usually operates synchronically after accent assignment, so 'contracted verbs' may have a non-recessive accent on the surface, as in $\tau\bar{\iota}\mu\hat{\omega} \Leftarrow \tau\bar{\iota}\mu\acute{\alpha}\omega$ 'I honour'. On the interaction between vowel contraction and accentuation, see Noyer (1997).

innovations commonly assumed for Greek involve a shift of accent from one syllable to another in words of a certain shape; we shall survey the most important of these accent shifts after first discussing the recessive accentuation of finite verbs.

3.3.1 The recessive accentuation of finite verb forms

As noted above, the law of limitation arose at a pre-classical and almost certainly pre-dialectal period of Greek. The recessive accentuation of finite verb forms is also common to all dialects for which we have evidence,[7] and therefore again likely to be of pre-dialectal date.

Finite verb forms in Vedic Sanskrit are enclitic in certain syntactic positions. The possibility that this is an inherited peculiarity also characterizing an early period of Greek suggested to Wackernagel (1877) an elegant account of the origin of recessive accentuation in Greek finite verb forms, along the following lines. Once Greek had acquired the law of limitation, a sequence of unaccented syllables at the end of a word became phonologically impossible if it exceeded a certain length.[8] Enclitic words exceeding the crucial length were therefore no longer possible. With the exception of the present indicative forms of *εἰμί* 'be' and *φημί* 'say', which were short enough to remain enclitic,[9] enclitic finite verb forms acquired a recessive accent as a substitute for enclisis. As Wackernagel put it, 'es sucht die sprache möglichst viel sylben tief zu betonen, wo sie nicht alle tief betonen kann' (1877: 458–9). Recessive accentuation subsequently spread to the majority of finite verb forms in all syntactic positions, whether they were originally enclitic or not.

If Wackernagel's account, which has been widely accepted, is indeed correct, the recessive accentuation of finite verb forms was an innovation of Greek that was closely connected to the introduction of the law of limitation and occurred either at the same time or shortly afterwards as a strategy for repairing enclitic forms that had become phonologically aberrant.

3.3.2 Accent shifts

Several sound changes postulated for Greek involve a shifting of the accent under certain conditions. Wheeler's law, Vendryes's law, and Bartoli's law describe accent shifts that command wide (though not universal) acceptance today.

[7] On Doric past indicative forms ending in *-αν* or *-ον* (e.g. *ἐλέγον* 'they said'), see p. 72 with n. 39.

[8] Two or three morae, depending on the shape of the word.

[9] The 2nd person sg. forms *εἶ* 'you are' and *φῄς* 'you say' are, however, accented. For explanations of these forms, see Wackernagel (1877: 460–6).

Wheeler's law describes an early and probably pan-Greek change shifting an accent from a final syllable to the penultimate syllable in words ending in a sequence heavy syllable–light syllable–light syllable (*ποικιλός > ποικίλος).[10]

Vendryes's law describes an essentially Attic change that may have occurred as late as the fourth century BC; this change shifted the accent from the penultimate syllable to a light antepenultimate in words that originally had a circumflex on the penultimate (*ἐγῶγε > ἔγωγε, ἐρῆμος > Attic ἔρημος).[11]

The law named after Bartoli describes the retraction of the accent from a long vowel in a final syllable onto a light penultimate syllable in words of more than two syllables (*δεσποτής > δεσπότης).[12] The period and dialect or dialects at which this change operated are disputed. Bartoli (1930: 34) regarded the change as pan-dialectal but belonging to a historical rather than prehistoric period. He thought the change had affected the Semitic loan words σαμβύκη 'triangular musical instrument with four strings' and χαλβάνη 'resinous gum of a Syrian umbelliferous plant', and regarded contact between Greeks and Semitic peoples as belonging to the historical period.[13] However, we know little about the time or circumstances in which these words might have been borrowed, and recessive accentuation is in any case very common in loan words (Sommerstein 1973: 133). For Kiparsky (1967: 81), Bartoli's law and Vendryes's law together describe a single change in which the accent was retracted from an accented long vowel onto a preceding light syllable when some syllable preceded the light syllable and/or some syllable followed the one with the long vowel. It would follow that if Vendryes's law describes an essentially Attic change then so should Bartoli's law.[14]

[10] Wheeler (1885: 60–104); Collinge (1985: 221–3), with bibliography; Devine and Stephens (1994: 103–4).

[11] Vendryes (1904: 262–3, summary treatment; 1905–6*b*, full exposition); W. S. Allen (1973: 239); Collinge (1985: 199–202); Devine and Stephens (1994: 102); Probert (2004: 283–90, discussing the extent to which accentuations due to Vendryes's law found their way into the Koine as well as Attic).

[12] This would be a special case of a sound change already postulated by Hirt (1895: 32).

[13] For σαμβύκη cf. (according to Bartoli 1930: 26; Braun 1982: 26) Biblical Aramaic *šabbᵉḵā'*, but see West (1992: 75); for χαλβάνη, cf. Hebrew *ḥelbᵉnāh* (see Bartoli 1930: 26; Braun 1982: 26).

[14] As independent evidence for this conclusion, Kiparsky cites the Attic recessive accentuation of compounds of ἔτος 'year', such as διέτης 'lasting two years', as contrasted with the final accentuation of the same words in the Koine (διετής). The correct interpretation of the dialectal difference here is complicated by the possibility that the difference in accentuation is connected to a difference in declension; see Choer. Th. 1. 167. 31–168. 3 and cf. Chandler (1881: 199), with further references.

All these accent shifts are subject to numerous exceptions: many words appear to fulfil the conditions for a shift of accent without the accent shift having occurred. For this reason, the basis for the claim that these changes have occurred at all requires investigation and the existence of exceptions needs to be explained. I shall not in fact present the arguments for and against all of these changes here, or investigate all their exceptions, but shall discuss in general terms the ways in which exceptions to an accent shift or other sound change may arise and then look in more detail at Wheeler's law in particular. Wheeler's law will play a role in some of the discussions in Part II, and we should therefore examine the evidence for such a change and the limits within which it has affected the Hellenistic accentual system. For further discussion of the other changes just mentioned, the reader is referred in the first instance to the introductions and further bibliography provided by Collinge (1985).[15]

3.3.2.1 Exceptions to accent shifts

One might attempt to account for the exceptions to the Greek accentual sound changes by saying that they occur in words formed at a period when the relevant sound change had ceased to operate. However, a difficulty emerges: there are words that *have* undergone a certain change and yet are known to be of more recent formation than some of the exceptions. For example, the word πενθερός 'father-in-law', which is inherited,[16] ought to have undergone the change described by Wheeler's law. The word παιδοκτόνος 'child-murdering' looks as if it *does* show the effect of the change, but belongs to a purely Greek, and probably post-Mycenaean, type of compound formed by means of the linking vowel -*o*-. Thus παιδοκτόνος is a younger word than the inherited πενθερός,[17] and yet πενθερός does not obey Wheeler's law whereas παιδοκτόνος apparently does.

We need to take into account not only the operation of sound laws but also analogical processes that might restore forms destroyed by a sound change that has ceased to operate. It is also necessary to consider the possibility that a change has been morphologized—that it has continued

[15] On questions of chronology see also Meier-Brügger (1992), who assembles evidence for the relative chronology of the law of limitation, Wheeler's law, the σωτῆρα rule, the Aeolic generalization of recessive accentuation, and Vendryes's law.

[16] πενθερός is cognate with Lithuanian *beñdras* 'companion', although Greek substituted -ερο- for *-ρο-. We cannot know how early Greek made this substitution, but a *terminus ante quem* is given by the attestation of metrically guaranteed πενθερός in Homer (e.g. *Od.* 8. 582).

[17] παιδοκτόνος is first attested in Sophocles (*Ant.* 1305) and may well be an innovation of 5th-cent. BC Attic tragedy.

to operate within a restricted morphological class after having ceased to operate across the whole lexicon.

Diachronic sound changes often give rise to synchronic phonological regularities or, in the terms of generative grammar which we shall use here (but which are introduced in more detail on pp. 112–13), synchronic phonological rules. For example, High German underwent a historical process in which stop consonants were devoiced in word-final position. Synchronically, this has produced a rule that devoices stops that are basically (or 'underlyingly') voiced when they appear in word-final position. Thus, the final consonant of *Bund* [bʊnt] 'confederation' is underlyingly voiced, as shown by its appearance in non-final position in *Bundesrepublik* 'federal republic' [bʊnd-], but it undergoes a synchronic rule of word-final devoicing.

Synchronic phonological rules do not always mirror exactly the diachronic changes that produced them. For example, the environment of a phonological rule may be extended or restricted by analogical changes operating after the original sound change has ceased to be operative. We should therefore keep in mind a clear distinction between diachronic changes and the synchronic rules that result from them.

We shall refer to synchronic phonological rules as *major rules* if they apply without exception to every sequence of sounds fulfilling a given set of phonologically defined conditions. Besides major rules, there are synchronic rules that do not apply in this exceptionless fashion. They often apply only to certain morphological classes, and they often have idiosyncratic lexical exceptions even in the classes where they do apply. We shall refer to these as *minor rules*.[18] Morphologization can then be seen as the historical process through which a major rule becomes a minor rule.

Sometimes, the conditions under which a minor rule applies are extended over the course of time; this is known as *rule simplification*. A consequence of rule simplification is that sometimes a major rule gives rise to more than one minor rule with different morphological conditions, and not all of these minor rules have undergone rule simplification to the same degree, if at all. In fact, there is no reason why a set of minor rules should be related to each other in synchronic terms even if, diachronically, they had their origin in a single major rule. Failure to recognize this point has caused a certain amount of confusion in discussions of the Greek accent shifts.

[18] For 'minor rules', see Sommerstein (1977: 158). More recent generative phonological models operate with different concepts and formulations; readers trained in lexical phonology will see that major rules are approximately the post-lexical rules of lexical phonology, while minor rules are approximately the lexical rules. Nothing I say hangs on the difference between earlier and later models, but here a formulation in terms of major and minor rules is advantageous as it allows us to sidestep issues that are not immediately relevant, such as the number of cyclic phonological levels to be assumed for Greek.

In considering the major accentual rules (resulting from diachronic phonological changes) that have been postulated for some stage of Greek, one might consider how the forms that at the time of our evidence appear to 'obey' each rule derive their accentuation. There are three possibilities.

(*a*) A word is accented in accordance with a major rule because the rule is still in operation.
(*b*) A word was accented according to the major rule when it was in operation. The major rule was then lost, but analogy did not restore the original form.[19]
(*c*) The major rule has been lost but a minor rule affecting the relevant class of word has remained. That is, the rule has continued to operate, subject to morphological conditioning.

3.3.2.2 Wheeler's law

Wheeler (1885: 60–104) argued that an originally finally accented word ending with a sequence heavy syllable–light syllable–light syllable (__ ∪∪) retracted its accent from the final to the penultimate syllable.[20] He found evidence for this accent shift in various categories of Greek word, among them adjectives in -λος;[21] perfect participles in -μένος; compounds of type φωσφόρος 'light-bearing'; and datives plural of type πατράσι.[22] For each of these categories there is some evidence for original final

[19] This tends to be the case when there is no model on which analogy could readily have operated.

[20] Wheeler's law thus refers to syllable weight, not vowel length. Cf. E. Hermann (1923: 12–13); Collinge (1985: 221).

[21] Wheeler claimed that his dactylic retraction law applied to adjectives in -ρος as well as -λος, but in fact none of his examples of dactylic words with intermediate accentuation are adjectives in -ρος, apart from the (impossible) reconstructions *δᾱ̆Ϝίρος and *γᾱ̆Ϝύρος that he suggested as pre-forms for δαΐρος 'capable of burning' (the accentuation of this word is in fact uncertain: see Arc. 79. 15–16 and Theognost. 70. 20–1, especially the former with Schmidt ad loc.) and γαῦρος 'exulting in' (Wheeler 1885: 65). Wheeler's treatment of -ρος and -λος together reflects the view that -ρο- and -λο- were historically the same suffix. This view is due to what we today recognize as the merger of IE **r* and **l* in Sanskrit, and is now outdated.

[22] Wheeler (1885: 14, 98) also regarded other intermediately accented polysyllabic oblique cases of consonant stems, e.g. ἀστέρος 'star' (gen. sg.), as deriving their accentuation from his dactylic retraction law working together with analogical pressure from the nom. and acc. forms. Some at least of these words are likely, however, to have had the accent on the stem-final syllable from the beginning. Thus the -ε- of ἀστέρος ought to have been lost in IE if the accent was on the ending, as in πατρός beside πατέρα. By contrast, the -ρα- of the dat. pl. forms πατράσι and μητράσι goes back to a vocalic liquid **r̥*, which should not have carried the accent in IE, at least at a stage when accent was correlated with the presence of a full vowel. For this reason, presumably, datives plural of type πατράσι have been taken far more seriously than other oblique cases of consonant stems as evidence for Wheeler's law.

accentuation. We shall consider here the adjectives in -λος, the perfect participles in -μένος, and the compounds of type φωσφόρος 'light-bearing'.

Vedic Sanskrit suggests that adjectives in -λος were originally accented on the final syllable. In Greek, Wheeler (1885: 61–6) argues that those with a dactylic termination, and only those, have a penultimate acute: e.g. ποικίλος 'colourful' (penultimate acute) but χθαμαλός 'near the ground' (final acute). To anticipate the conclusions of Chapter 9, which will be presented in detail there, it is probable that intermediate accentuation had become the normal accentuation for words with the synchronic suffixes -ιλο- and -υλο- and was not in general a possible accentuation for other words in -λο-.[23] While Wheeler's law is likely to be responsible for the situation in historical terms, there is probably no need to postulate any synchronic remnant of Wheeler's law for words in -ιλο- and -υλο-. Rather, the basic (or 'underlying') forms of the derivational suffixes themselves have changed, so that these are now accented on the penultimate syllable.

In Vedic Sanskrit, perfect participles in -*āna*-, corresponding to Greek -μενο-, have a final accent: so Skt *jagmāná*- 'having gone'.[24] Greek perfect participles in -μενο- are most often dactylic in termination and always have intermediate accentuation. Some Greek words that originated as participles in -μενο- but became separated from the finite verb have final accentuation: Σῳζομενός, Ὀρχομενός, Στησαμενός, Τεισαμενός, Φαμενός, δεξαμενή 'reservoir', and εἰαμενή 'meadow' (Wheeler 1885: 67). These are not perfect but present or aorist participles in origin, a fact that M. Bloomfield (1897: 56) emphasized in objection to Wheeler. However, they at least show that Greek once had finally accented participles in -μενο-, like Vedic (which certainly had specifically perfect participles of this form).

One might imagine the following sequence of events leading to the elimination of final accentuation in Greek participles in -μενο- (other than the isolated forms mentioned above).

(*a*) All participles in -μενο- have a final accent.
(*b*) Wheeler's law operates: participles in -μενο- with dactylic ending retract the accent onto the penultimate syllable.
(*c*) (not necessarily prior to *d*.) Present and aorist participles in -μενο-, which normally have a tribrachic ending (∪∪∪) in

[23] The word αἰόλος 'quick-moving, nimble' is of unclear etymology (cf. Ch. 9 n. 12) but has the accentuation predicted by Wheeler's law for a word of dactylic termination in -λο-. Since this is the only intermediately accented word that terminates in -λος but not in -ιλος or -υλος, however, it is hardly sufficient to support a synchronic rule changing final to intermediate accentuation in -λος words of dactylic termination; such a rule would in any case have several exceptions (see p. 216).

[24] Klingenschmitt (1975: 161–3) reconstructs the proto-form of this suffix as *-*mH*$_1$*no*- and on this basis is able to account for the variety of different forms found in the daughter languages; cf. also Beekes (1995: 107–8).

Greek (since *-μενο-* is generally preceded by the thematic vowel *-ο-* or by *-α-*), are remade with recessive accentuation, by analogy with other verbal forms. Perfect participles are not affected by this change, perhaps because they were felt at an early stage to be outside the verbal system.[25]

(*d*) Perfect participles in *-μενο-* with tribrachic ending (∪∪∪) retract the accent onto the penultimate syllable by analogy with those with dactylic ending.

Stage (*d*) is necessary because although most Greek perfect participles in *-μενο-* end in a dactylic sequence, even those that do not accent the penultimate syllable. Thus, *λελυμένος* 'having been released' (∪∪∪) is accented in the same way as *λελειμμένος* 'having been left' (__ ∪∪).

Let us now consider the various postulated stages of development from the perspective of the way in which a rule arising from Wheeler's law affects the accentuation of perfect participles in *-μενος*. The change described by Wheeler's law first of all ceased to operate in exceptionless fashion but left a minor rule applying to perfect participles in *-μενος* ending in a dactylic sequence. Secondly, we have an instance of rule simplification: the environment of this minor rule was extended to all perfect participles in *-μενος*, whether they ended in a dactylic sequence or not. At that point, however, the synchronic evidence for an underlying finally accented perfect participle formant *-μενο-* was lost and the minor rule was thus lost altogether, the perfect participle formant *-μενο-* being reinterpreted as having underlying penultimate accentuation.

Vedic Sanskrit normally has final accentuation in the type of compound exemplified by Greek *φωσφόρος* 'light-bearing'; compare Vedic *puṣṭiṃ-bharáˊ-* 'bringing prosperity'. This category of compound is characterized by a second member that functions as a verbal adjective with active meaning. In Greek, the accent is on the penultimate syllable when that syllable is light, as in *ἀκροβόλος* 'skirmisher'. When the penultimate syllable is heavy, the accent is on the final syllable, as in Vedic: so *ἱππαγωγός* 'horse-leading'.

Kuryłowicz (1958: 147–8) argues that Wheeler's law is not responsible for penultimate accentuation in this type of compound. His objection rests on the fact that the penultimate accentuation of the *-βόλος* type is not sensitive to the weight of the antepenultimate syllable. He further argues that for the majority of examples this antepenultimate consisted simply of the linking vowel *-ο-* that serves to connect the two

[25] Cf. Mycenaean *qe-qi-no-me-no*, used as an adjective qualifying chairs and tables. Tucker (1981: 18) suggests that perfect middle participles could have been created while no finite verbal forms yet existed, beside adjectives in *-το-* with privative *ἀ-*, on the pattern illustrated by *ὅσα ἀκίνητα καὶ κεκινημένα* 'all things at rest and in motion' (Plato, *Sph.* 249d).

parts of many Greek compounds, in other words a light syllable. Of the 73 possible second elements of such compounds he collects, only 32 begin with a long vowel in the antepenultimate syllable (type *-ηγόρος*) or a consonant cluster that could cause a closed antepenultimate (type *-στρόφος*). Furthermore, 14 of these involve clusters of stop followed by liquid, which do not always make a preceding syllable heavy in Greek. On the strength of these statistics, Kuryłowicz finds unlikely Wheeler's (1885: 89) explanation of the type *ἀκροβόλος* 'skirmisher' as due to analogy on the type *ἐπεσβόλος* 'throwing words around'. But Kuryłowicz does not take account of Wheeler's argument that at an early period of Greek a much larger proportion of compounds had a heavy antepenultimate than was the case later (Wheeler 1885: 90–1). Old compounds with heavy antepenultimate tended to be replaced during the history of Greek by the 'canonical' type with linking vowel: with original *s*-stems as first member, *τευχεσφόρος* 'bearing arms' (Aeschylus, *Ch.* 627) was replaced by *τευχοφόρος* (Euripides, *Rh.* 3); *σακεσφόρος* 'shield-bearing' (Sophocles, *Ajax* 19) is glossed by the *Suda* (*σ* 37) with *ὁπλοφόρος* (and with *ἀσπιδηφόρος*). With an original *ā*-stem as first member, Wheeler contrasts *ἐλαφηβόλος* 'shooting deer' (*Il.* 18. 319) with *ἐλαφοκτόνος* 'deer-killing' (Euripides, *IT* 1113).

It is likely, then, that at an early stage relatively many compounds of the type in question had a heavy antepenultimate syllable. All those that, in addition, ended in two light syllables (and therefore in a dactylic sequence) underwent the change described by Wheeler's law. The resulting intermediate accentuation was then generalized to all compounds of our type with active meaning that ended in two light syllables: an example of rule simplification.

As a synchronic rule, Wheeler's law had certainly been lost by the fifth century BC, when the finally accented adjectival suffix *-ικο-* began to be highly productive: the accent shift left no trace in words formed with this suffix. Since some of these are old (5, of which 3 end in a dactylic sequence, are attested in Homer;[26] no certain Mycenaean example[27]) and therefore presumably obeyed Wheeler's law when it was in force, we may say that in these the underlying final accent surfaced again after the loss of the rule (see Sommerstein 1977: 217). In diachronic terms, *Τρωϊκός* 'Trojan' (dactylic) was remade by analogy with words of type *ὀρφανικός* 'orphaned' (not dactylic).

Evidence that Wheeler's law had once applied to *-ικος* words may come from *ἡλίκος* 'as great as', *τηλίκος* 'so great', *πηλίκος* 'how great',

[26] The fem. *παρθενική* 'maiden', *ὀρφανικός* 'orphaned', *Ἀχαιϊκός* 'Achaean' (dactylic), *Πελασγικός* 'Pelasgian' (dactylic), *Τρωϊκός* 'Trojan' (dactylic). Cf. Buck and Petersen (1945: 636).

[27] For possible examples see Chantraine (1966, esp. 179).

and *ὁπηλίκος* 'how great', old pronominal adjectives that may originally have contained the adjectival suffix *-ικο-* (though this point is disputed[28]) but were no longer synchronically derived from a stem (*ἡλ-*, *τηλ-*, etc.) plus *-ικο-* because the stems had become opaque. In this case the underlying representations have changed (see Sommerstein 1977: 238–40):

Stage I (Wheeler's law in force):
underlying form *ἡλ + ικός*
Wheeler's law ↓
surface form *ἠλίκος*

Stage II (Wheeler's law in force):
underlying form *ἠλίκος*
(no rules applicable)
surface form *ἠλίκος*

Stage III (Wheeler's law lost):
underlying form *ἠλίκος*
(no rules applicable)
surface form *ἠλίκος*

All indications suggest that the change described by Wheeler's law applied in Greek at a very early period and also ceased very early to apply as such. Later instances of 'Wheeler's law' accentuation arose only in certain productive categories such as the perfect participles in *-μένος*, but in some of these categories the retraction was no longer confined to the original environment for Wheeler's law.

We know of no dialectal divergences relating to Wheeler's law.[29] This suggests that the sound change belongs to a pan-Greek stage. By contrast with Vendryes's law, the grammarians preserve no traces of a situation before Wheeler's law.[30] The change described by Wheeler's

[28] See Chantraine (1968–80: 410 s.v. *ἡλίκος*), with bibliography.

[29] Wheeler's law is of course irrelevant for Lesbian, but this is because of the Lesbian recessive accent and tells us nothing about Wheeler's law itself. Bubeník's (1983: 140–1) treatment of Wheeler's law as existing only in Attic is unfounded; he appears to be confused by the irrelevance of the law for Lesbian. Meier-Brügger (1992: 286) correctly states that Wheeler's law is pan-Greek.

[30] For another argument for an early date for Wheeler's law (stop plus liquid sequences tend to be treated as heterosyllabic), see Ruipérez (1972: 149); cf. Hermann (1923: 12–13). Miller (1976: 15–16) argues that Wheeler's law had its origins in a more restricted accent shift of late IE. Kiparsky (1973: 814) had formulated a synchronic rule for Sanskrit shifting an accent from an underlyingly accented case-ending onto a preceding (underlying) syllabic *r̥*, *n̥*, *m̥*, *i*, or *u* (cf. Kuryłowicz 1958: 17–21; 1968: 30–1); according to his analysis it is by virtue of this rule that Skt *pitŕ̥ṣu* 'fathers' (loc. pl.), corresponding to Greek *πατράσι*, is also accented on the penultimate syllable. Miller takes Kiparsky's Sanskrit rule to have applied already in IE, arguing that sequences affected by this rule almost always became dactylic in Greek after the development of vocalic *r̥* to

law should be regarded as early both because of its probably pan-dialectal character and, perhaps more importantly, because by the time of our evidence for accentuation there is nothing resembling a synchronic Wheeler's law as such, only some minor rules and other traces left behind by a historical Wheeler's law.

ra (see also Meier-Brügger 1992: 288) and that Greek then generalized the accent shift to all originally finally accented words with dactylic ending. For the standard view, on which Greek and Sanskrit have innovated independently, see Wackernagel (1914*a*: 27).

4 A BRIEF HISTORY OF SCHOLARSHIP ON THE GREEK ACCENT

4.1 Introduction

For many branches of classical linguistics, serious scholarship began in the nineteenth century. Modern work before about 1800 is rarely of more than historical interest; any ancient wisdom that comes down to us may be enjoyed for its quaintness, but one would not dream of taking it seriously.

Such an attitude is a convenient excuse for not reading anything that precedes the nineteenth century, and for steering well clear of the ancient sources with all their difficulties. However, there is at best a risk of replicating discoveries that were made several centuries ago, and at worst a danger of *not* replicating these discoveries, in other words of losing knowledge. For some areas of enquiry, moreover, we absolutely owe to our remote precursors the fact that we can now know anything at all; we cannot afford to neglect what they have to say. The study of Greek accentuation is an excellent case in point. For this subject it would also be particularly untrue to say that serious scholarship began in the nineteenth century. A virtually continuous tradition of enquiry runs from antiquity to the present day, and our current state of knowledge genuinely owes something to every age since the Hellenistic period. At the same time, the nineteenth and the twentieth centuries have seen some major turning points whose importance it would be wrong to deny.

A full history of scholarship on the ancient Greek accent would require a book in itself, one that ought perhaps to be written. Such a history cannot be attempted here, but the following survey is intended as an overview of the main developments in the field.

4.2 From antiquity to the Renaissance

We discussed in Chapter 1 the role of the ancient grammarians in providing us with evidence for the ancient Greek accent. Ancient grammarians not only provided data but also made the first generalizations about those data. On p. 29 we saw a typical rule from Arcadius' epitome of Herodian's *Περὶ καθολικῆς προσῳδίας·*

τὰ εἰς ΜΟΣ ἔχοντα πρὸ τοῦ Μ τὸ Γ ὀξύνεται προσηγορικὰ ὄντα· νυγμός φραγμός τιναγμός ἀλαλαγμός ὑλαγμός διωγμός. σεσημείωται τὸ ὄγμος (ἡ τάξις) βαρυνόμενον, καὶ τὸ Ῥίγμος οὐ προσηγορικόν. (Arc. 65. 17–21)

Words ending in *-μος* that have *γ* before the *μ* have an acute on the final syllable if they are common nouns: *νυγμός* ['pricking'] *φραγμός* ['fence'] *τιναγμός*

['shaking'] *ἀλαλαγμός* ['loud noise'] *ὑλαγμός* ['barking'] *διωγμός* ['pursuit']. Exceptions are *ὄγμος* ('array'), which is accented non-finally, and *Πίγμος*, which is not a common noun.

A generalization of the sort made here is far more valuable than a simple list of words with their accents could have been. Lists are rarely complete, but Herodian's rule tells us that common nouns ending in *-γμος*, except for *ὄγμος* 'furrow', are finally accented even if not explicitly listed. We cannot know that Herodian did not overlook a word here or there, or that Arcadius did not omit pertinent information from Herodian. As suggested earlier, however, we do know that in assuming final accentuation for a word such as *ἀγμός* 'fracture' or *ἀραγμός* 'clashing' we are more likely to be right than wrong. Herodian's rule would not have been formulated as it was if it were not generally true that common nouns in *-γμος* have final accents.

In giving accent rules, Arcadius and other ancient sources heavily emphasize the terminations of words. The ancient grammarians clearly regarded the end of a word as the most important factor determining its accentuation. The significance of material coming at the end of the word is a valuable insight that has become a guiding principle of modern theoretical work (see pp. 117–19, 145–8).

Our main—and very great—debt to the period between antiquity and the Renaissance is for the preservation of Hellenistic doctrine on Greek accentuation. We have seen that the works of the most ancient and therefore most first-hand authorities do not survive as such (p. 22). The Hellenistic wisdom handed down to us is due first to Herodian's synthesis (see pp. 22–5) and then to generations of scholars and copyists who read earlier scholars, excerpted them, and incorporated earlier doctrines into their own treatises or into marginal notes in manuscripts. Sources as late as the *Iliad* scholia preserved in a manuscript of the tenth century AD (Venetus Marcianus 822), or the Homeric commentary by the twelfth-century bishop Eustathius, frequently preserve ancient statements that would otherwise have been lost. The work of the Alexandrians would be entirely irrecoverable if it were not for the grammarians, commentators, and copyists whose work preserved at least some of the scholarly output of antiquity.

4.3 From Erasmus to 1800

At the end of the fifteenth century, the pronunciation of ancient Greek in western Europe was roughly that of the contemporary modern Greek language.[1] This meant that certain consonants were pronounced

[1] Erasmus (1973 [1528]) alludes on occasion to variation depending on the native language of the speaker, but national differences in the pronunciation of ancient Greek

'incorrectly', as were many of the vowels. The consonant written with the letter φ, for example, was pronounced [f] instead of [p^h]; the vowel written with η was pronounced [i] instead of [ε:]. The ancient vowel length distinctions were also not observed in pronunciation. The language was pronounced with a 'stress accent' which had the effect that accented syllables tended to last longer than unaccented ones. Vowel length thus correlated with the accent (as in modern Greek) instead of being a distinctive characteristic of certain vowels, independent of the accent.

Evidence was available to suggest that there were differences between the ancient and modern pronunciations. Towards the end of the fifteenth century and the beginning of the sixteenth, several scholars began to take notice of this evidence and a movement to reform the modern pronunciation of ancient Greek was set afoot (see e.g. W. S. Allen 1987: 140–6, 149–54).[2] As far as the accent was concerned, a particular problem presented itself. The Renaissance pronunciation of classical Greek, in which vowel length correlated with the accent, made nonsense of ancient poetic metres. It was also incompatible with statements of ancient authors that presupposed certain vowels to be inherently long and others inherently short, regardless of whether they were accented or not. As a result of the new interest in reconstructing the original pronunciation of ancient Greek, a number of different solutions to this problem of the accent were put forward.

The Dutch humanist Erasmus composed a treatise on the correct pronunciation of Latin and Greek in the form of a dialogue between a bear and a lion (1973 [1528]). During the course of the dialogue, the bear gives an account of opinions heard at a grammarians' colloquium. These opinions, which clearly correspond to Erasmus' own, include arguments to the effect that neither the Greek nor the Latin accent should cause lengthening of the vowel on which it falls. Contemporary pronunciation is criticized for lengthening the accented vowel of a word such as *ἀνέχου* 'bear up' and *ἀπέχου* 'abstain', which should be short, and for pronouncing a word like *Μενέλᾱος* as if the unaccented penultimate vowel were short. The bear draws parallels between accentuation and music, in which a low note may be held for a long time, a high one for only a short time (Erasmus 1973 [1528]: LB 941). The special musical nature of ancient Greek accentuation is not made entirely explicit, but

appear to have been considerably less pronounced than they are today and did not particularly concern the accent. Hennin (1684: 21–2) describes the pronunciation of ancient Greek at the time of Erasmus, with national variations.

[2] Many of the texts from this period relating to the debate over the correct pronunciation of Latin and Greek have been collected by Haverkamp (1736; 1740).

the parallels with music suggest that Erasmus thought of the ancient Greek accent as involving primarily a change in pitch.

Although Erasmus' views were well supported by ancient evidence, the idea that accent and vocalic quantity could be independent of one another was clearly counter-intuitive to many of his successors. Some 150 years later, the pronunciation of ancient Greek had been reformed in most of Europe following the precepts of Erasmus and other reformers (see Hennin 1684: 22). The pronunciation of the accent had, however, remained unchanged. In 1673 there appeared an anonymous treatise entitled *De poematum cantu et viribus rythmi*. The author was soon identified as the Dutch scholar Isaac Voss (see Hennin 1684: p. vii). Where Erasmus had taken the incompatibility between the contemporary pronunciation of Greek accents and the meaningful rendering of ancient poetic metres as evidence that the accent did not originally lengthen vowels, Voss took the same problem as a reason for denying that the Greek accent originally fell on those syllables that had come to be marked with an accent.

Voss (1673: 18) knew that the invention of signs for accents was attributed to Aristophanes of Byzantium and that a succession of grammarians had subsequently occupied themselves with the study of the accents. He did not deny that the accent marks were indeed invented at the time of Aristophanes of Byzantium, but argued that they were not originally used for the purpose for which they later came to be employed. In Voss's time, which preceded the discovery of accented papyri, no very early accented texts were known; Voss (1673: 19) stated that no accent marks are found until about a thousand or nine hundred years before his time. He regarded this lack of accented texts as evidence that accent marks were originally used only for instructing the young on metre, and were placed on metrically strong syllables. He contrasted the contemporary placement of accent marks on three lines of Homer (*Od.* 3. 1–3) with the placement he took to be original (Voss 1673: 19).

Accent placement contemporary to Voss:

Ἥλιος δ' ἀνόρουσε λιπὼν περικαλλέα λίμνην
Οὐρανὸν ἐς πολύχαλκον, ἵν' ἀθανάτοισι φαείνῃ
Καὶ θνητοῖσι βροτοῖσιν ἐπὶ ζείδωρον ἄρουραν·

'Ancient' accent placement according to Voss:

Ἥλιὸς δ' ἀνοροῦσε λιπὼν περικάλλεἀ λίμνην
Ὄυρανον ἐς πολυχάλκον ἵν' ἀθανατοῖσι φαἐίνῃ
Καὶ θνητοῖσι βροτοῖσιν ἐπὶ ζειδῶρον ἀροῦραν·

Voss's rejection of the antiquity of the Greek accent marks in their later positions was taken up and argued at greater length by another

Dutchman, Heinrich Christian von Hennin (1684). Hennin's own theory that Greek was to be accented according to the same accent system as Latin is famously responsible for the widespread oral mis-accentuation of ancient Greek in Britain and the Netherlands, and in their former colonies,[3] to this day.

Until about 1800, discussions of the Greek accent continued to be dominated by the questions of the original pronunciation of the accent and the antiquity of the accent marks. Those who accepted the antiquity of the accent marks in their traditional use continued to have difficulty with the notion that an accent could fail to lengthen its vowel and therefore to destroy poetic metre. There followed further suggestions, such as that of William Primatt (1764) that the Greeks used one pronunciation for verse (observing vowel quantities, ignoring accents) and another for prose (observing accents, ignoring quantities); the Irish scholar Arthur Browne (1800: 5) referred to this idea as 'the common dictum which is so often heard from the sons of Oxford and Cambridge'.

Browne himself added a new dimension to the question of the authenticity and pronunciation of Greek accents. Four hundred years previously, ancient Greek was pronounced in the same way as the contemporary modern Greek language. The reform movement had begun as a reaction to conflicts between this pronunciation and ancient evidence, and it was obvious that if the reformers were right then the pronunciation had changed between antiquity and their own times. By 1800, however, ancient Greek was in most countries no longer pronounced in the same way as contemporary modern Greek and the pronunciation of modern Greek, with its stress accent, appears in some quarters to have been forgotten. The modern Greek pronunciation of the accent was therefore ready to be rediscovered. Browne (1800: 8) comments on the lack of attention hitherto paid to the question of modern Greek pronunciation in the debate over the ancient Greek accent:

> IT occurred to me, however, that it was very surprising that no author on the subject seemed to have taken the pains to enquire what was the pronunciation of the modern Greeks, or their mode of using the accents: is it that no inference can be drawn from their usage, as to that of the ancients? this is easily said, but it has not been said by any of these writers.

Browne's account of his discovery of the pronunciation of the modern Greek accent illustrates the great rarity of opportunities to meet and

[3] In the USA Hennin's system survived for some decades after the Revolutionary War but was then abandoned under German influence in classical studies (see W. S. Allen 1987: 152).

interview speakers of modern Greek in the Ireland of the late eighteenth century; we gain some impression of the factors that had long allowed the pronunciation of modern Greek to escape notice:

> IMPRESSED with these sentiments [sc. that the Greeks are now the same people as they were in antiquity] I felt myself interested, when I heard that a Grecian ship, whose seizure has since been the occasion of a remarkable suit in the Court of Admiralty, and of the consequent detention of the seamen for a considerable time, had been driven by stress of weather into the port of Dingle in this kingdom. This ship, called La Madona del Caso San Speridione, Captain Demetrio Antonio Polo, belonged to Patrass, a town situated not far from the ancient Corinth. The business of their suit brought the captain and several of the crew to Dublin, and was the occasion of their remaining in this metropolis for a considerable time. I took the opportunity of frequently conversing with them, and though their want of erudition and information might seem an argument against drawing any inference from their practice, to me it appeared the contrary, because it gave me the unprejudiced and unpremeditated modes of pronunciation of persons who could not understand or know the reasons of my enquiries, or purport of my observations. The result was, to my great surprise, that the practice of the modern Greeks is different from any of the theories contained in the books I have mentioned: it is true they have not two pronunciations for prose and for verse, and in both they read by accent, and so far confirm the theory of the learned bishop [Samuel Horsley (1796)], the latest writer I have mentioned; But they make accent the cause of quantity; they make it govern and control quantity; they make the syllable long on which the acute accent falls, and they allow the acute accent to change the real quantity: in these latter respects therefore they agree with Mr. Primatt, but they desert him when he therefore concludes that poetry is not to be read by accent—they always reading poetry as well as prose by accent. (Browne 1800: 9–10)[4]

Discussions of the authenticity and pronunciation of the ancient Greek accents did not stop after 1800. Indeed, new books and pamphlets considering the same questions on the basis of the same facts continued to appear (cf. e.g. Pennington 1844: 78–309; Blackie 1852). Meanwhile, however, some new discoveries had started to accumulate, and these eventually helped to resolve the questions that had been raised in the Renaissance and debated ever since. These included the 'discovery' of Sanskrit by scholars in the West and the beginnings of comparative Indo-European philology; findings of ancient Greek papyri with accent marks; and the discovery of fragments of ancient Greek music. In addition, two new and important collections of data on Greek accentuation facilitated the synthesis of what was known about the Greek accent with the new discoveries in other areas. We shall therefore

[4] Compare the situation reported by Blackie half a century later (1852: 50): 'That the living Greeks give a distinct prominence to these very syllables, any man may learn by seeking them out in Manchester or London, in both which places they have a chapel.'

leave here the dispute over the antiquity and original pronunciation of the ancient Greek accents and consider what else of relevance was happening in the nineteenth century.

4.4 Data gatherers of the 1800s: Göttling and Chandler

The nineteenth century saw two important compendia of data on ancient Greek accentuation, Karl Göttling's *Allgemeine Lehre vom Accent der griechischen Sprache* (1835) and Henry Chandler's *A Practical Introduction to Greek Accentuation* (first edition 1862, second edition 1881). The aim of both scholars is primarily descriptive: to provide a synthesis of what we know from the statements of ancient grammarians and the practice of medieval manuscripts.

A fundamentally descriptive purpose does not necessarily exclude any attempt to find a general principle behind Greek accentuation, and indeed Göttling suggests such a principle. For Göttling the accent was placed on the syllable carrying the most important semantic information (the *Hauptbegriffsylbe*), or as close to that syllable as allowed by the law of limitation (Göttling 1835, esp. 14). Chandler, on the other hand, derides Göttling's principle and explicitly excludes matters of theory and principle from his own work (Chandler 1881: pp. ix–x). The second edition (1881) of Chandler's work remains the standard collection of data.

Each of the authors of the compendia just mentioned also produced a modest handbook distilling the most essential data on Greek accentuation into a relatively small quantity of text.[5] These works were followed by others including those of Vendryes (1904), Postgate (1924), and Bally (1945); to these I have added another inspired by Postgate's book (Probert 2003). Like ancient epitomators, these authors aim to make the mass of information available more easily accessible to a student of the language by selecting the most important facts and arranging them in an attractive way. From Vendryes on these authors are also less fiercely empirical than Chandler; we may look to these works for some explanations as well as facts.

4.5 Comparative treatments of the Greek accent

Following the introduction of Sanskrit to western scholars and the beginnings of Indo-European comparative philology, knowledge about the accentuation of Vedic Sanskrit became available to western scholars

[5] Göttling's larger work (1835) grew out of the smaller one (3rd edn. 1825), which was sufficiently unique and useful at its time to be translated into English (1831). Chandler's smaller book (1867) is an abridgement of the first edition of his larger one (1862).

in the mid-nineteenth century.[6] The acquisition of this knowledge led to an interest in the comparative reconstruction of the Proto-Indo-European accentual system on the basis of Greek and Vedic.[7] After some suggestions, especially in a book review by Benfey (1846), comparative work on the accentuation of Indo-European languages began with Benloew's *De l'accentuation dans les langues indo-européennes tant anciennes que modernes* (1847).

Further Indo-European languages whose accent systems could be compared with those of Greek and Vedic were soon added. Balto-Slavonic languages were used as early as Bopp (1854*a*: 79–91) and were increasingly exploited as more work on Balto-Slavonic accentuation became available.[8] Germanic was brought into comparative studies of accentuation by Verner's (1877) discovery of the Germanic sound change now known as Verner's law. This discovery explained a series of exceptions to Grimm's law (which describes a series of sound changes affecting early Germanic consonants) as conditioned by the position of the Indo-European accent. It therefore became possible to use Germanic as a source of indirect evidence for the position of the Indo-European accent, although the accent of the Germanic languages themselves had been fixed on the initial syllable of the word since the beginning of the historical period.

The search for a general principle for the accentuation of Indo-European is prominent in early comparative work. Benloew (1847: 45–50), anticipated in passing by Benfey (1846: 842), argued that the earliest principle of accentuation in Indo-European languages was that the accent fell on the modifying element of the word that had been added last—the so-called *dernier déterminant*. For example, he considered Greek augmented forms such as ἔλεγε 'he said', with the accent on the augment, to be built up of root, inflectional ending, and augment; these elements he regarded as having been added one by one, with the augment attached last. The augment therefore constituted the *dernier déterminant* and hence carried the accent (Benloew 1847: 45).

[6] The first descriptive account of the Sanskrit accent in the West was made by Böhtlingk (1848), who based his observations on the statements of Sanskrit grammarians. As more accented texts became available, these provided a further source of information (see e.g. Whitney 1856).

[7] A summary of the main developments in this area as far as 1985, with a somewhat different emphasis from mine, is provided by Szemerényi (1985: 15–18).

[8] For an early comparative treatment of accentuation in Balto-Slavonic languages, see Fortunatov (1880). Hirt in 1895 includes a detailed treatment of the accentuation of Balto-Slavonic (pp. 54–98), as well as a discussion of the question of IE contour accents, a question for which the Balto-Slavonic evidence is crucial (pp. 99–167).

Later in the attested stages of the daughter languages, according to Benloew, the principle of the *dernier déterminant* came into competition with a 'logical' principle, under which the part of the word containing the most important notion was accented. For example, the accentuation of most verbal forms in Sanskrit and Greek is explained on the logical principle: the accent is on the root syllable, which expresses the main idea, rather than on any part added after the root (Benloew 1847: 47).

Maurice Bloomfield (1883: 35) rejected the principle of the *dernier déterminant* and implied that enthusiasm for the theory of word-construction Benloew assumed was no longer as strong as it had been:

> That is, according to the theory of word-construction which ruled in Benloew's day without opposition, and which is accepted to-day also to a very considerable extent, a word is made up of root, suffix, personal inflexion, case-ending, augment, reduplication and so forth, and whichever one of these various elements in the word had been joined to the word last, that was entitled to this higher musical pitch. (M. Bloomfield 1883: 34).

Interestingly, now that generative grammar has returned to a model where words are assembled a piece at a time,[9] the principle of the *dernier déterminant* has found an adherent in Hock (1993: 187–8 and n.10). The theory is, however, modified considerably by the introduction of 'dominant' and 'recessive' morphemes, and owes much to recent generative work (see pp. 112–23).

Bopp (1854*a*, esp. 16–23; 1854*b*) also argued for a general principle, but a different one from Benloew's; his central thesis was that originally the closer to the beginning of the word the accent was, the greater the expressive force it gave to the word.[10] Over time, the expressive force of a word might be 'weakened', and the accent would move nearer to the end. In cognate words where the Sanskrit accent is nearer to the end than the Greek, Bopp generally considered Sanskrit to have undergone 'weakening'. The Greek law of limitation, which restricts the distance the Greek accent can fall from the end of the word, was on the other hand considered a 'weakening' of Greek.

Wheeler (1885) attempted to account in a more principled manner for the divergences between Greek and Sanskrit nominal accentuation. Unlike Bopp, Wheeler regarded Greek as the main innovator. His main thesis was that the Greek recessive accent originated as a secondary

[9] There is a difference between the conception of the piecing together of words in current lexical phonology and that of the 19th-cent. comparativists. For the latter, the process was a historical one: the most basic word form, the root, was envisaged as having existed as an independent word at some remote period in the past. With time the root was gradually extended by the addition of further elements. In lexical phonology, the process is a strictly synchronic one: speakers are regarded as assembling the words they use out of an inventory of basic components.

[10] Some objections in Schweizer (1855, esp. 299–301).

accent falling always on the third mora from the end of the word, or the fourth in the case of a penultimate syllable containing a long vowel or diphthong and a final syllable containing a short vowel,[11] as in ἄνθρωπος 'man'. In Greek, this secondary accent regularly took over the function of primary accent under certain conditions, particularly when it fell nearer to the end of the word than the original primary accent. Under other conditions, the original primary and secondary accents came into competition and one or the other won out for each individual word (Wheeler 1885: 9–13).

Wheeler's theory of the recessive accent was taken up by Brugmann in the section on accentuation in the first edition of his *Grundriss der vergleichenden Grammatik der indogermanischen Sprachen* (Brugmann 1886: 543–6). By contrast, M. Bloomfield in 1888 criticized Wheeler's theory in detail and proposed his own theory of the accentuation of recessive nominal forms.[12] Beginning with Wackernagel's (1877) explanation of the recessive accent of Greek finite verbs (see p. 87), Bloomfield envisaged the recessive accent as spreading from the finite verbs to nominal forms by analogical processes.

In the second edition of the *Grundriss*, Brugmann (1897: 962) was more cautious in his characterization of the recessive accent. He no longer cited Wheeler, and it appears that Wheeler's theory was discredited following Bloomfield's criticism (1888). However, even in the second edition it was essentially Wheeler's hypothesis that Brugmann upheld, and he implied some annoyance with new proposals whose novelty he saw as merely terminological.

The search for a unified principle of accentuation for early Indo-European has not been given up, but there is still little agreement. The apparent unpredictability of nominal accentuation in those Indo-European languages with inherited free accentuation has received particular attention. Kuryłowicz (1958: 35–69; 1968: 38–56) started from a situation where all Indo-European nominal paradigms displayed movement of the accent between the stem and the ending, along the lines of the accent movement in the paradigm of Greek πούς 'foot' (nom. sg., accent on stem), πόδα (acc. sg., accent on stem), ποδός (gen. sg., accent on ending), etc. He then proposed a series of analogical changes that operated within Indo-European at a time when the position of the accent in most paradigms became fixed; further analogical changes were proposed for the individual daughter languages. (For more details, see pp. 151–3.)

[11] Or one of the word-final diphthongs that counted as 'short' for the purposes of accentuation; see p. 61.

[12] He had already suggested the outlines of this theory in 1883 (M. Bloomfield 1883: 30, 50, 56, 62).

More recently, a number of scholars (notably Schindler, Eichner, and Rix) have suggested that Indo-European had several different 'accent paradigms'—types of mobile or static accentuation within the paradigm—, and have sought to give these a precise definition. Concentrating on words with three basic elements, called 'root', 'suffix', and 'ending' (e.g. *πα-τέρ-α* 'father', acc. sg.), they have suggested five basic accent patterns for nominal paradigms: an 'acrodynamic' type with fixed root accent; a 'mesodynamic' type with fixed accent on the suffix; a 'proterodynamic' type in which the accent moved between root and suffix; a 'hysterodynamic' type in which the accent moved between suffix and ending; and an 'amphidynamic' type in which the accent moved between root and ending, passing over the suffix. Greek *πατήρ* 'father', for example, would continue a hysterodynamic pattern of accent movement, since the accent moves between the 'suffix' *-τηρ-*/*-τερ-* and the ending; cf. the acc. sg. *πατέρα*, gen. sg. *πατρός*. Although occasional paradigms have continued the posited accent patterns into attested daughter languages, accent paradigms are on the whole reconstructed using indirect evidence (e.g. from ablaut). The theory essentially relates to an earlier stage of reconstructed Indo-European than that directly inherited by the daughter languages such as Greek, and we therefore do not dwell on it here. The reader is referred to Rix (1992: 121–4) for a more detailed exposition, and to Szemerényi (1996: 161–2) for a brief history of scholarship in this area, with further bibliography; the evidence is now collected and discussed in detail by Kim (2002: 19–46).

A different approach to early Indo-European accentuation has been suggested by Dybo, Nikolayev, and Starostin (1978) and taken further by Kortlandt (1986) and Lubotsky (1988). These scholars argue that at an extremely early stage Indo-European had been a tonal language, in which each syllable had its own distinctive tone. When an accent system developed, accentual placement initially depended on the 'tonal' properties of the morphemes making up a word. For Lubotsky, the different tonal properties were conditioned by the various consonants in the morpheme. For example, he relates the difference in accentuation between Vedic *kā́ma-* m. 'desire' (initial accent) and *sādá-* m. 'sitting, riding' (final accent) to the fact that the first word has a voiceless stop in the root whereas the second has a plain voiced stop[13] (1988: 97).[14] Salmons (1992: 140–2) assembles typological claims about early

[13] As Lubotsky explains (1988: 21), he is sympathetic to the glottalic theory of the IE consonant system but retains the traditional terminology for the sake of clarity. Under the most widespread version of the glottalic theory, the plain voiced stops of the traditional system are taken to have been phonetically ejectives. Salmons (1993) extensively reviews earlier literature on the subject.

[14] For some discussion and criticism see the reviews by Hart (1990) and Jamison (1991).

Indo-European that could be taken as supporting evidence for a tonal system, and shows how the change from such a system to the accent systems attested in the daughter languages would fit into a typology of accentual change. He does not, however, fully commit himself to a tonal hypothesis.

Hirt's *Der indogermanische Akzent: Ein Handbuch* (1895) provided a synthesis of the comparative work of the preceding half century. This work was superseded in 1929 by volume five (on accentuation) of his *Indogermanische Grammatik*. The most up-to-date and systematic treatments of Indo-European accentuation from a historical perspective are still Kuryłowicz's *L'Accentuation des langues indo-européennes* (second edition, 1958) and his volume *Akzent · Ablaut* in the *Indogermanische Grammatik* series edited by himself (1968).[15]

4.6 Treatments of historical problems within Greek

The early comparative work led scholars to tackle the Greek accent itself from a historical point of view. It became possible to focus on the respects in which Greek had innovated and to seek historical explanations. The chief of these Greek innovations were the recessive accentuation of finite verb forms and the law of limitation. Wackernagel's (1877) discussion of the recessive accent of the finite verb has already been mentioned (p. 87).

Before the law of limitation can be explained, it needs to be formulated in a way that is accurate and at the same time linguistically realistic. There has been a long series of attempts to do this, and the issue continues to occupy scholars. Gottfried Hermann (1801: 63–4) attempted to formulate the law with reference only to the mora: the accent could not be further from the end of the word than the third-to-last mora. As he recognized, however, this formulation of the law fails for words with a long vowel in the penultimate syllable and a short vowel in the ultimate, e.g. *ἄνθρωπος* 'man'.[16]

Benloew (1847: 73) regarded the limitation of the accent as governed by two factors: the weight of the final syllable and the number of syllables

[15] Some points of methodology and detail have been criticized in subsequent work, especially where Kuryłowicz's analogical mechanisms are concerned. For Greek, see e.g. Kiparsky (1973: 800–2).

[16] G. Hermann (1801: 64) and Göttling (1835: 27–8) suggested that in such words the penultimate syllable is shortened somewhat. They appealed to Homeric subjunctives such as *ἴομεν* 'we may go' and *εἴδετε* 'you (pl.) may see', taking these to be shortened forms of *ἴωμεν* and *εἴδητε*. This view was rejected by Benloew (1847: 75), who pointed out that there are Sanskrit parallels for forms with short modal vowel expressing potentiality. There is now no doubt that the Homeric forms do indeed continue IE short-vowel athematic subjunctives.

following the high pitch. That is to say, the accent could not fall further than the third syllable from the end of the word, or more than one syllable from a final heavy syllable. This formulation had the merit of stating the facts accurately, and enabled the main difficulties posed by the law of limitation to be seen clearly. Why does the law appear to count both the number of syllables after the accent and the weight of the final syllable? More seriously, why is it *only* the final syllable whose weight is taken into account? Can the law be formulated in such a way that it emerges naturally from some simple and plausible principle?

Misteli (1868: 92–3) proposed an influential theory accounting for the limitation of the accent with reference to a 'middle pitch' intermediate between the high pitch of an accented mora and the low pitch of an unaccented one. This middle pitch was held to come after a high pitch, before the voice comes back to the low pitch. Thus every acute accent represented the first element in a sequence high pitch–middle pitch–low pitch. Representing the three pitch levels by H, M, and L (for 'high', 'middle', and 'low') above the relevant syllable (not Misteli's own notation) gives e.g.

H M L
é le gon = ἔλεγον 'they said';

H M L
án $t^hr\bar{o}$ *pos* = ἄνθρωπος 'man'

The essence of Misteli's theory was that there must not be any of the word left after the low pitch has been reached. In order to make the theory explain the non-occurrence of words such as **φέρομενος* 'being carried', Misteli argued that the high pitch could occupy only one mora:

H H M L
* *p^h*é ro me nos* = ** φέρομενος 'being carried'

is impossible.

To explain the legitimacy of ἄνθρωπος 'man', however, Misteli argued that where the two morae following the high pitch belonged to the same syllable the middle pitch could easily occupy both of these morae as the voice sank from the high pitch back to the low pitch:

H M M L
án t^h*ro o pos* = ἄνθρωπος 'man'

Misteli's theory also requires that the low pitch at the end of the word cannot occupy more than one mora. This restriction is needed to account for the position of the recessive accent in a word shaped like λαμβάνω 'I take', i.e.

H M L
lam bá no o = λαμβάνω 'I take'

rather than

H	M	L	L	
**lám	ba	no	o	= **λάμβανω.

Hadley (1869–70) adopted Misteli's theory with slight modifications and formulated it as follows: 'the early Greeks changed the older accent of words so as to secure this cadence, ''high tone, middle tone, short low tone,'' wherever it could be secured without throwing back the accent' (p. 12).

Maurice Bloomfield (1883: 44–56) attacked the 'Misteli–Hadley theory', as he called it, and it was thereafter discredited. This was largely because Hadley attempted to extend the theory to account also for the Latin accent, making use of a postulated period of Graeco-Italic or Graeco-Latin unity after the fragmentation of the Indo-European parent language.[17] There were serious objections, including evidence that the rule determining the position of the classical Latin accent (describable, like the Greek law of limitation, as a 'Dreisilbengesetz') arose within Latin, and by the time Bloomfield wrote the idea of a Graeco-Italic period had been given up (M. Bloomfield 1883: 49). However, the extension of the theory to the Latin accent was not part of Misteli's original argument. The only other serious objection Bloomfield (1883: 48 n. 1) raised was the failure of Misteli's hypothesis to account for the *σωτῆρα* rule (on which see p. 61). However, there is no particular reason to assume that the *σωτῆρα* rule results from the same principle as the law of limitation proper, especially as the law of limitation probably belonged to all Greek dialects, at least at an early stage,[18] whereas the *σωτῆρα* rule was not shared by Doric and may well have been an innovation of Attic-Ionic (so implicitly Vendryes 1904: 57–8).

W. S. Allen, foreshadowed by Jakobson (1971*a* [1937]: 263), has essentially reinvented the Misteli–Hadley theory independently.[19] He argues for a unit he calls the 'contonation', consisting of a high pitch on the accented mora and a falling glide on the following mora, if part of the same syllable, or otherwise on the subsequent syllable (1966: 10).[20] He then formulates the law of limitation as follows: 'Not more than one mora may follow the contonation' (p. 13).

[17] For this Graeco-Latin hypothesis see Curtius (1859), attacked by Lottner (1860), with a counterattack by Curtius (1860).

[18] On Chadwick's (1992) hypothesis concerning Thessalian accentuation, see p. 74.

[19] Jakobson (1971*a* [1937]: 263) formulates the law of limitation as follows: '*the vocalic morae between the accented vocalic mora and the final one cannot belong to different syllables*. In other words, the span between the accented and the final mora cannot exceed one syllable.' W. S. Allen introduced the notion of the 'contonation' as a significant unit.

[20] Kiparsky (1967: 75–6) also reaches the conclusion that the high pitch is followed by a downward contour.

An alternative approach to the law of limitation has been to deny that a penultimate syllable with a long vowel genuinely contained two morae for the purposes of accentuation. If the penultimate syllable only ever contains one mora for accentual purposes, the law of limitation may be stated simply as a constraint preventing the accent from falling further from the end of the word than the third-to-last mora. This idea is to be found in the work of several scholars of the early twentieth century: Vendryes (1904: 55–6), Gauthiot (1913: 215), and, in essence, Meillet (1916: 169–70).[21] It was criticized by E. Hermann (1923: 88) and Jakobson (1971*a* [1937]: 263) and then fell out of fashion for some decades. It has since been revived by Kuryłowicz (1958: 107; 1968: 84) and adopted also by Garde (1968: 145). This view is defended with the observation that the contrast between acute and circumflex accents is phonetically predictable on penultimate syllables with long vowels—it depends on the length of the vowel in the final syllable, at least in Attic.[22]

There are some serious problems with the above-mentioned idea. Penultimate syllables with long vowels clearly contain two morae for purposes other than accentuation; for example, the long vowel causes such a syllable to count as heavy in poetry. The advantages of a neat formulation of the law of limitation in terms of three morae need therefore to be set against the disadvantages of a messy treatment of the penultimate syllable. The above-mentioned observation that acute and circumflex accentuation do not contrast distinctively on penultimate syllables depends, if it is to help explain the law of limitation in historical terms, on the *σωτῆρα* rule being a common Greek phenomenon at least as old as the law of limitation. Kuryłowicz (1958: 110; 1968: 84 n. 3) assumes without question that Doric has innovated in eliminating the *σωτῆρα* rule, but this is a moot point. In the light of these difficulties it is unsurprising that, by contrast with W. S. Allen's formulation of the law of limitation in terms of a 'contonation', the theory that the penultimate syllable can contain only one mora has recently found little favour.

Although W. S. Allen's 'contonation' theory has indeed been influential, the law of limitation continues to occupy scholars (cf. also

[21] This view is different from that of G. Hermann (1801: 64) that a 'long' vowel in the penultimate syllable of a word accented on the antepenultimate was physically shorter than an ordinary long vowel (see n. 16 above). Vendryes (1904: 55), for example, states quite clearly that a penultimate long vowel is just as long in actual duration as a final long vowel.

[22] Note, however, that when a word ends in one of the diphthongs *-αι* or *-οι* and is accented on a long vowel in the penultimate syllable, the type of accent depends on whether the final diphthong counts 'long' or 'short' for accentuation (see p. 61), not on its actual duration.

Mouraviev 1972), and there have also been occasional attempts at a more narrowly historical account in terms of successive stages (see Lucidi 1966, with earlier bibliography). Most recently, the tools of generative phonology have been brought to bear on the synchronic side of the matter; we shall turn to some generative treatments presently.

In addition to the law of limitation and the recessive accentuation of the finite verb, further accentual innovations were also proposed for Greek: Wheeler's law, Vendryes's law, and Bartoli's law have been discussed in Chapter 3.

4.7 Generative treatments of Greek accentuation

Linguistic research of the past century has been characterized by a strong interest in the synchronic analysis of language, and in the modelling of human linguistic processing. A number of fundamentally different types of model have emerged; one of the most prominent, known as generative grammar, relies heavily on the notion that speakers make use of a system of rules in which the significant synchronic regularities of a language are encoded.

A simple example will serve to illustrate this concept of synchronic rules. Speakers of English clearly know, in some sense, that most nouns form their plurals in [z] (as in *dogs*), in [s] (as in *cats*), or in [ɪz] (as in *ashes*), and furthermore that the form [z] occurs only after a voiced sound that is not a sibilant, [s] only after a voiceless sound that is not a sibilant, and [ɪz] only after a sibilant.[23] In a generative model, this

[23] The fact that speakers are able to extend such a pattern to words they have never heard before is easily demonstrated by what has come to be known as the '*wug*-test' (see Pinker 1999: 14–15 and index s.v. '*wug*-test'). A speaker of English is presented with an invented word, such as *wug*, and asked to provide the plural. Most speakers will produce the plural [wʌgz] in accordance with our pattern. There is, however, much debate as to how exactly speakers produce such forms, whether by the application of a rule or by mental analogy with stored forms (see e.g. Nakisa, Plunkett, and Hahn 2000). Evidence in favour of the use of actual rules would appear to come from the fact that in language acquisition children typically pass through a stage in which incorrect but regular forms such as 'foots' are produced; these suggest that a rule for the formation of regular plurals has been acquired and is being used inappropriately because an exception has yet to be learned. However, recent models of analogy-based morphological processing are able to reproduce these effects without recourse to rules (see e.g. Marchman, Plunkett, and Goodman 1997). The use of rules in actual linguistic processing thus remains open to debate. If, therefore, a rule-based model appears to provide useful insights e.g. in historical work, it is worthwhile to consider whether the usefulness of such a model actually furnishes some evidence in favour of rule-based processing or whether the same insights could have been derived from an analogy-based model. I shall not attempt to make such a judgement about the insights of the rule-based analyses of Greek accentuation described here but shall, however, return briefly to this question in relation to some of my own results at the end of Ch. 13.

regularity would be expressed by means of a rule deriving all of these forms from a single basic or 'underlying' form. There would be room for debate as to the appropriate basic form for the plural marker and as to the exact rule, but if the basic form of the plural marker were taken to be [z], a rule might state that [z] becomes [ɪz] after a sibilant and is devoiced to [s] after a voiceless consonant that is not a sibilant.[24] Furthermore, our rule might be refined slightly with the observation that it consists in fact of two parts, the second of which becomes simpler if the two parts are stated as separate rules that must apply in the following order:

(i) [z] becomes [ɪz] after a sibilant
(ii) [z] becomes [s] after a voiceless consonant

Rule (ii) may be stated in the form given rather than in the more cumbersome form '[z] becomes [s] after a voiceless consonant that is not a sibilant' because if the plural marker (underlying [z]) were being added to a stem ending in a voiceless sibilant, such as *ash* ([aʃ]), rule (i) would apply first to produce *ashes* [aʃɪz]. Rule (ii) would then no longer be applicable, because in the form produced by rule (i) the consonant [z] does not follow a voiceless consonant but the vowel [ɪ].

Any generative model of phonology thus includes, firstly, a store of basic or *underlying* forms, called a *lexicon*.[25] As its name suggests, the lexicon consists essentially of words and information about words. As our discussion of English plural marking implies, however, it is not necessarily whole words that belong in the lexicon; significant components of words, or *morphemes*, such as the plural marker may also be stored as separate items. Secondly, a generative model assumes a set of ordered phonological rules that produce the forms of words (and phrases, etc.) actually uttered, the *surface forms*, from sequences of underlying forms. The process by which a surface form is so produced, or *derived*, is called a *derivation*. Details, such as the principles on which rules are ordered, differ from one generative model to another. But let us return to accents.

Systems of accentuation lend themselves rather well to description in terms of rules, and have in fact been so described long before the advent

[24] It is not my purpose here to produce a full account of English plural-marking, which would also have to take into account matters such as the voicing of the sibilant at the end of the stem *house* in the plural *houses*.

[25] The exact conception of the lexicon differs from one generative model to another; in lexical phonology the lexicon is not only a repository of memorized elements but also a processing unit where morphological and phonological rules interact to produce fully formed words. But it remains true that all generative phonological models involve the storage of basic items in the lexicon.

of formal generative phonology. Generative phonology has now given renewed impetus to the synchronic description of accent systems, including those of Indo-European and its daughter languages, and has also motivated attempts to describe changes in accentuation systems in terms of changes to systems of synchronic rules.

Kiparsky (1967) first applied the concepts of generative phonology to Greek accentuation, aiming to show that certain apparent irregularities were in fact describable in terms of the quite regular application of an appropriate series of ordered rules. The irregularities in question involve the declension and accentuation of certain third-declension nouns whose accent moves between the stem and the ending, as in *πούς* 'foot', acc. sg. *πόδα*, gen. sg. *ποδός*, etc. In general, nouns exhibiting this kind of accent movement have the accent on the last or only syllable of the stem in the nominative, vocative, and accusative forms, and on the ending in the genitive and dative forms; such nouns seem at first sight to form a lexically defined class describable as subject to rules whose effect is to accent the stem-final syllable in the nominatives, vocatives, and accusatives and the ending in the genitives and datives. But some nouns with mobile accentuation do not quite conform to the usual pattern. For example, the word for 'daughter', *θυγάτηρ*, has the accent of the nominative singular not on the stem-final syllable (*-τηρ*) but on the syllable that precedes; the accent of the genitive/dative dual *θυγατέροιν* and that of the genitive plural *θυγατέρων* fall not on the ending but again on the preceding syllable. To bring these apparent exceptions into the main class of nouns with mobile accentuation Kiparsky posits a synchronic equivalent of Bartoli's law (cf. p. 88) shifting the accent from a long vowel in a final syllable onto a short vowel in the preceding syllable in words of more than two syllables:

underlying form:	/t^{h}ugatēr/	/t^{h}ugateroin/	/t^{h}ugaterōn/
'normal' rules for mobile accentuation:	/t^{h}ugatḗr /	/t^{h}ugateroîn /	/t^{h}ugaterôn/
'Bartoli's law':	/t^{h}ugátēr/	/t^{h}ugatéroin/	/t^{h}ugatérōn/
surface form:	/t^{h}ugátēr/	/t^{h}ugatéroin/	/t^{h}ugatérōn/

Furthermore, the apparently irregular root accentuation of the genitive-dative dual *ὦτοιν* and genitive plural *ὤτων* of *οὖς* 'ear' are described as derived synchronically from underlying forms /owat-oin/, /owat-ōn/ by the ordered application of several rules: first the 'normal' rules for mobile accentuation, then 'Bartoli's law', and then a rule contracting underlying /owa/ to /ō/:

underlying form:	/owatoin/	/owatōn/
'normal' rules for mobile accentuation:	/owatoîn/	/owatôn/

'Bartoli's law':	/owátoin/	/owátōn/
contraction:	/ő́toin/	/ő́tōn/
surface form:	/ő́toin/	/ő́tōn/[26]

The publication of Chomsky and Halle's (1968) book on English phonology, with an emphasis on English stress patterns, inspired generative treatments of the phonology of many languages. Sommerstein (1973) tackled the phonology of Greek, including accentuation, modelling his work on that of Chomsky and Halle. Another attempt to describe the placement of the Greek accent following the same model was made by Voyles (1974).

All these generative treatments emphasize not the positions of accents on individual words but the existence of a system of rules for accent placement. In a long article including a generative account of Greek, Sanskrit, and Balto-Slavonic accentuation and a reconstruction of an Indo-European system of accentual rules, Kiparsky (1973: 844) calls for the extension of this interest in rules to the historical reconstruction of the accentuation systems of unattested languages:

> If the accent patterns of Greek, Sanskrit, and Lithuanian indeed result from the sorts of very general and abstract rules set forth above, then we may understand the failure of the 'comparative method' to lead to a satisfactory explanation of the history of IE accentuation. The comparative method depends on establishing regular correspondences between surface entities, in forms where analogical changes have not operated. But in the material at hand there really are no regular correspondences, in the usual sense, and no analogical changes to speak of. An acute accent is in no way comparable to, say a *p*. An IE surface accent, unlike a phoneme, is derived by a rule—which, because of its abstract nature, may produce a very different accent pattern in another input configuration. The way to make sense of the facts is to study the development of the rules.

From the beginning, these rule-based accounts allowed for interaction between morphology and accentuation.[27] For example, the rules Kiparsky (1967) postulates for the accentuation of words with paradigmatic accent movement make reference to the distinction between the stem of a word and its ending. In the later article Kiparsky (1973) both recognizes that traditional analyses of Greek accentuation involved reference to morphological information and appeals to cross-linguistic comparisons to widen the range of possible ways in which accentuation may be morphologically determined:

[26] I give here only a subset of Kiparsky's ordered rules, with some simplifications and not in Kiparsky's own formulation.

[27] More generally, some interaction between phonological and morphological processes was recognized in early generative models of grammar, and such interaction has become much more explicitly recognized in more recent models such as lexical phonology.

Underlying the traditional analysis is the unstated assumption that morphological accent rules, such as those involved in the Greek declensions, are rules which put accents on particular morphemes in particular morphological contexts. The assumption is that they will all take the form of the rules implicit in the discussion so far, e.g. 'in weak cases, the first mora of the ending is accented'. But we know that, although many accent rules are indeed of this type, not all are. For example, many languages have inherently pre-accented or inherently post-accented morphemes—i.e. morphemes which put the accent on whatever syllable (or mora) immediately precedes or follows them, regardless of what morpheme it may belong to. Such a morpheme is the suffix *-tā* in Sanskrit, forming abstract nouns, which is always pre-accented, e.g. *púruṣa-* m. 'man', *puruṣátā* f. 'manhood'. The detailed analysis of Japanese accentuation by McCawley [(1968: 130–83)] contains a number of similar examples. (Kiparsky 1973: 802)

Kiparsky (1973: 802) makes use of this insight in his analysis of Greek. Words are divided into two main accentual classes, 'basically accented' and 'basically unaccented'. The 'basically accented' words have a characteristic accent that remains on the same mora throughout the paradigm (as far as permitted by the law of limitation). The 'basically unaccented' words are those in which the accent moves within the paradigm, either between stem and endings as in some athematic stems such as *πούς* 'foot', accusative singular *πόδα* but genitive singular *ποδός*, or between the second and first mora of the stem-final vowel, as in accusative singular *φυγήν* 'flight' but genitive singular *φυγῆς*. Kiparsky (1973: 802) accounts for the position of the accent of the 'basically unaccented' words by means of the following rules:

(9) a. Strong cases [i.e. nominatives and accusatives] have presuffixal accent.
b. Weak cases [i.e. genitives and datives] have post-stem accent.[28]

[The *-η-* of *φυγή*, *φυγῆς*, etc. is regarded as a 'theme vowel' belonging neither to the stem nor to the inflectional suffix.]

Notice that in his discussion of possible types of morphological accent rules Kiparsky referred to many languages having 'inherently pre-accented or inherently post-accented morphemes', as if the property of putting an accent on a certain syllable was a characteristic of the morpheme itself. The view that accentual properties reside in morphemes was already being adopted in work on Balto-Slavonic accentuation;[29] a synthesis of this work as far as 1976 was provided by Garde (1976), and Kiparsky and Halle took up the conception in full in a paper published the following year (1977). They postulated a number of abstract characteristics for the accentual systems of Slavonic, Vedic,

[28] Kiparsky's (1973) analyses of the accentuation systems of Skt, Balto-Slavonic, and IE are on similar lines.

[29] See also e.g. McCawley's (1968: 130–83) treatment of Japanese accentuation.

Lithuanian, classical Greek, and Proto-Indo-European, including the following (p. 209):

> There are three basic classes of morphemes:
> unaccented morphemes
> accented morphemes, which have an accent on one vowel in their underlying representation
> preaccenting morphemes, which induce an accent on the immediately preceding vowel . . .

For Kiparsky and Halle every accented or preaccenting morpheme contributes an accent to the underlying form of a word. On the surface, however, a word must normally have one and only one accent. The rules of the grammar thus need to derive a surface form fulfilling this requirement from an underlying form that may contain one accent, more than one, or none. Kiparsky and Halle postulate the 'Basic Accentuation Principle' to take care of this requirement (p. 209):

> If a word has more than one accented vowel, the first of these gets the word accent. If a word has no accented vowel, the first vowel gets the word accent.

According to Kiparsky and Halle, morphemes may have one further effect: under certain circumstances, a morpheme (whether or not it is underlyingly accented) may cause 'deaccentuation' of all preceding morphemes in the word, so that the surface accent of the word is derived as if all the preceding morphemes were underlyingly unaccented:

> a given morpheme may trigger the rule of Deaccentuation . . . which deaccents the entire preceding string. Whether or not a morpheme triggers Deaccentuation is in part specified in its lexical entry, and in part predictable morphologically. (Kiparsky and Halle 1977: 210)

Although in the first sentence of the paper classical Greek is named as one of the languages whose accentual system shares the characteristics postulated, Kiparsky and Halle do not elaborate further on Greek here. In a later article Halle and Kiparsky (1981: 161–80) expand on their system further; Greek is again mentioned from time to time, but actual examples are drawn exclusively from Balto-Slavonic languages and Sanskrit.

Steriade (1988: 276–80) made an important modification to the Basic Accentuation Principle of Kiparsky and Halle, in so far as it was to apply to Greek. In Steriade's analysis, if the underlying form of a word has more than one inherent accent, it is the inherent accent nearest to the end of the word, not the one nearest to the beginning, that surfaces. Her evidence consists of words in which a derivational suffix that induces final accentuation has been added to a finally accented base, e.g. *λιγυρός* 'sharp', derivative of *λιγύς* 'shrill'. In all Steriade's examples

the derivative has an accent on the last derivational suffix, not on the preceding syllable. Although some Greek evidence appears to support the view that the first inherent accent in a word surfaces (as long as it does not violate the law of limitation), Steriade argues that this evidence is better interpreted in another way. This evidence comprises the third-declension nominal forms with mobile accent, e.g. *πούς* 'foot', acc. sg. *πόδα*, gen. sg. *ποδός*, which contrast with paradigms such as that of *φύλαξ* 'guard', acc. sg. *φύλακα*, gen. sg. *φύλακος*, with accent on the stem throughout. Within a model on which the first inherent accent surfaces, the stem *ποδ-* would be taken as inherently unaccented, the stem *φύλακ-* and the genitive singular ending *-ός* as inherently accented. The inherent accent of *-ός* would only surface when this ending appears after an unaccented stem, as in *ποδός*; in *φύλακος* the inherent accent of the genitive singular ending *-ος* would be overridden by that of the preceding stem *φύλακ-*. In *φύλακα* the stem is inherently accented but the ending is not, while in *πόδα* both stem and ending are inherently unaccented; in the latter case a recessive accent would be assigned by default, just as in Kiparsky and Halle's model for Indo-European an accent on the initial syllable of a word is assigned by default to a word with no inherent accents (Kiparsky and Halle 1977: 209, quoted above). However, the kind of paradigmatic accentual mobility found in the word for 'foot' is restricted, with very few exceptions, to athematic nominal forms with monosyllabic stems, to which it applies almost consistently. Steriade therefore argues that it is better interpreted as a rule that applies to a small class of words only, not as the basic accentuation principle for Greek. Steriade (1988: 280) does, however, accept the view of Kiparsky and Halle that the first inherent accent in a word surfaced in Indo-European.

Steriade (1988: 280–1) also noted that some Greek suffixes cause 'deaccentuation': they cause lexical accents on all preceding morphemes in a word to be cancelled. The evidence comes from words whose suffixes cause them to be recessive regardless of the accentuation of the base word; an example is the suffix *-ιᾰ* that derives feminine nouns. These feminine words are recessive even where the base word is not, including where the accent of the base word could potentially have surfaced in the derivative without violating the law of limitation. Thus *βασίλεια* 'queen' is derived from *βασιλεύς* 'king', *ἀλήθεια* 'truth' is derived from *ἀληθής* 'true', and *ἀσέβεια* 'impiety' is derived from *ἀσεβής* 'impious'.

In Steriade's analysis, then, the inherent accent nearest to the end of the word surfaces in Greek if there is more than one inherent accent. However, if all inherent accents precede the part of the word where the law of limitation allows a surface accent to fall, then a recessive accent appears on the surface. If there is no inherent accent in a word, it is also a recessive accent that surfaces. And finally, if there is an inherent accent in a position

where it could potentially surface (i.e. where it would not violate the law of limitation) but it has been cancelled by a deaccenting element nearer to the end of the word, it is again a recessive accent that surfaces. These particulars are accepted by Halle in subsequent work (1997: 303–5) as well as, in essence, by Sauzet (1989) and Golston (1990).

Another major contribution of Steriade's (1988) has been to initiate a debate over how the accentuation rules for Greek should be implemented in a 'metrical' model of phonology. In a metrical model (for which see Hayes 1995), accentual phenomena are described as resulting from an abstract and hierarchical structure of prominence relations between definite constituents in a word—morae, syllables, certain groups of syllables, etc. This structure is dependent on an analysis of the word into groups of syllables called *feet*; the idea that syllables may be so grouped is based on languages such as English, in which a long word tends to have not only the main word accent but also one or more secondary accents. Many long words of English, such as *extraterritorial*, contain a secondary stress on every other syllable, counting from the main word accent backwards towards the beginning of the word: *èxtratèrritórial* (` = secondary accent; ´ = main word accent); further examples include *pàleòntológical*, *ùngrammàticálity*, *pronùnciátion*, *coùnterìndicátion*. The occurrence of these secondary accents gives rhythm to the whole word, rather as a regular 'beat' gives rhythm to music. In a metrical model the syllables of these words are envisaged as falling into rhythmic groups or feet as follows:

(extra)(terri)(tori)<al>
(pale)(onto)(logi)<cal>
(ungra)(mmati)(cali)<ty>
pro(nunci)(ation)
(counte)(rindi)(cation)

(In some English words, the final syllable falls outside the structure of alternating stresses. Syllables enclosed within triangular brackets, as <*al*>, are 'extrametrical', or ignored by the principles of syllabic grouping. The first syllable of *pronunciation*, which I leave unbracketed, fails to fall into a two-syllable foot not because it is ignored when it could be included but because it is left by itself after as many two-syllable feet as possible have been constructed from the end of the word towards the beginning.)

Within each foot, the first syllable is the rhythmically most prominent or 'head' syllable, rather as the first beat in a bar of music is the most salient. Within the whole word, the most prominent foot is the last; the head syllable of the last foot carries the main word stress in these English words. The principles of English rhythm and stress assignment

are complex, whatever the model used to describe them. Some words, such as *chàracterístically* or *ìntergaláctic*, have two unstressed syllables between the syllable with secondary stress and the one with primary stress; but it is not our purpose here to delve too deeply into these matters. What is important is that a metrical model takes as fundamental not the location of stresses *per se* but the groupings of various elements and the prominence relations between them.

Metrical models involving the grouping of syllables into feet assume that foot-construction rules vary from language to language. In some languages, feet are constructed, as in English, starting at the end (or almost at the end) of the word; other languages start at the beginning. Again depending on the language, either the first syllable in a foot (as in English) or the last will count as its head, or rhythmically most prominent part. For most languages, feet are taken to contain at most two syllables, but the foot-construction rules may or may not take account of syllable weight. For example, some languages do not allow a heavy syllable to fall in the weak part of a two-syllable foot, preferring to construct a one-syllable foot consisting of the heavy syllable alone.[30]

For ancient Greek, there is no very direct evidence that speech was characterized by rhythmic groupings of syllables as it is in English,[31] but it is possible that syllables were so grouped even in the absence of surviving direct evidence. Metrical analyses of Greek accentuation, beginning with Steriade's (1988), seek to discover a rhythmic organization of syllables or morae from which hitherto descriptively awkward facts such as the law of limitation might follow with immediate clarity, and whose justification would be precisely the light shed on such accentual phenomena.

Steriade (1988: 276) proposes that in Greek words to which recessive accentuation is to be assigned an absolutely word-final consonant is extrametrical, i.e. ignored by the foot-construction rules, as is a final syllable that is light once any absolutely word-final consonant has been discounted. When these extrametrical constituents have been excluded, two-syllable feet are constructed from the end of the word towards the beginning, with no further account taken of syllable weight. In each foot the syllable nearest to the beginning of the word is the head; at the level of the word the last foot is the head. These rules allow the syllable that is, *ex hypothesi*, the rhythmically most prominent in the word, the first syllable of the last foot, to coincide with the correct position for a

[30] Although foot-construction rules are language-specific, they seem to operate within a finite and rather small set of options; see Hayes (1995, esp. 62–85).

[31] For an attempt to assemble such evidence, see Devine and Stephens (1994: 99–156); cf. Ch. 2 n. 11.

recessive accent. Steriade's analysis of the structure of a recessive word may be illustrated as follows:

(*e.p*^{h}*e.*)(*ró.mee.*)<*n*> = ἐφερόμην
(*e.p*^{h}*e.*)(*ró.me.*)<*t*^{h}*a*> = ἐφερόμεθα
(*án.t*^{h}*roo.*)<*po.*><*s*> = ἄνθρωπος

(Long vowels are shown as sequences of two short vowels. Syllable divisions are indicated using dots. ( ) = foot boundaries. <> = boundaries of extrametrical constituents.)

Not all words are recessive, however. Final light syllables, for example, may be accented, as in λιγυρός 'light'. Steriade assumes that such a syllable has an accent present in the underlying form of the morphological element to which it belongs. An underlying accent (*a*) prevents its syllable from being extrametrical, and (*b*) forces its syllable to be placed in a strong position in foot-construction: (*li.*)(*gú.*)(*ró.*)<*s*> rather than **(*li.gú.*)<*ró.*><*s*> or **(*li.*)(*gú.ró.*)<*s*>.

The foot structure Steriade proposes for Greek, which was taken up by Halle (1997: 303–8), gives correct results on the surface but involves an appeal to extrametricality that is problematic in various respects (see the critique by Sauzet 1989: 89–90). In particular, foot-construction seems to be sometimes sensitive to syllable weight but not accentuation, and sometimes to accentuation but not syllable weight. Thus, a final light syllable is extrametrical unless it has an underlying accent, but a final heavy syllable is never extrametrical, even when it has no underlying accent.[32]

An alternative foot structure, not dependent on the position of the accent, is proposed by Sauzet (1989). Feet contain no more than two syllables and their assignment proceeds from the end of the word to the

[32] For Halle (1997: 303–5), extrametricality is expressed in terms of edge-marking parameters. In particular, a right parenthesis is inserted before a final light syllable, and a left parenthesis before an inherently accented element. Thus underlying (*ma.t*^{h}*ee.*)*si.s* (cf. surface μάθησις) 'learning' would have a final light syllable that is not inherently accented, whereas underlying (*bra.*)(*dú.s* (cf. surface βραδύς) 'slow' would have a final syllable that *is* inherently accented. This formulation has the advantage that the special characteristic of final light syllables—being preceded by a right parenthesis—is constant. However, it still leaves the difficulty that in some cases the foot structure determines accentuation whereas in others it is the accentuation that determines the foot structure. For Halle, this is not a problem because an 'accented' element—one that is specially marked (in some way) in the underlying representation—is carefully distinguished from a 'stressed' element—one that is phonetically prominent in the surface representation (see e.g. Halle 1997: 278 n. 1). Thus for Halle 'accent' may influence foot structure but 'stress' may not. However, although this formulation avoids circularity it leaves the problem that the syllables counting as heavy for the scansion of Greek poetry should probably be the same as those that must be placed in a strong position in foot-construction. Since the scansion of Greek poetry is independent of the pitch accent, it is preferable not to assume that foot structure depends either on surface accentuation or on underlying features that determine the position of the surface accent.

beginning, with no extrametrical syllables. The first syllable in each foot is the head, and single-syllable feet are allowed in preference to the placing of a heavy syllable in the weak position of the foot. Each of Sauzet's feet thus consists of two light syllables, or a heavy syllable followed by a light one, or a single heavy syllable.[33]

Golston (1990) adopts a foot structure similar to that of Sauzet, but feet consist of no more than two *morae* instead of two *syllables*. Feet thus consist of two light syllables or a single heavy syllable;[34] a heavy syllable followed by a light one is not a possible foot for Golston. A final light syllable is left out of foot-construction unless preceded by a light syllable (see Golston 1990: 73). Under this analysis, the final foot always begins in the same place as under Sauzet's analysis, but may be followed by an extrametrical syllable.

Foot structures after Sauzet (1989):
li.(*gu.ró.*)*s* = λιγυρός
(*laip.*)(*see.*)(*róo*)*n* = λαιψηρῶν
(*án.*)(t^h *roo.po*)*s* = ἄνθρωπος

Foot structures after Golston (1990):
li.(*gu.ró.*)*s* = λιγυρός
(*laip.*)(*see.*)(*róo*)*n* = λαιψηρῶν
(*án.*)(t^h*roo.*)<*po*>*s* = ἄνθρωπος[35]

For Golston, as for Sauzet, foot structure does not depend on the position of the accent. The position of the pitch accent also does not necessarily coincide with the metrically prominent position (the first syllable of the last foot). Using either Golston's foot structure or Sauzet's, assignment of the *recessive* accent (as in ἄνθρωπος) may be stated as a rule assigning high pitch to the syllable immediately preceding the metrically prominent syllable, i.e. to the last syllable before the final foot.[36]

[33] Hayes (1995: 75) introduces the term 'uneven trochee' for quantity-sensitive trochaic feet of this kind, only to dispense with this type as a primitive metrical unit (p. 77). The type does, however, feature in Hayes's typology; it is treated as a manifestation of the syllabic trochee (for which in general see Hayes 1995: 63, 182–205), occurring in syllabic-trochee languages that have a contrast between heavy and light syllables (see Hayes 1995: 101–5).

[34] i.e. 'moraic' rather than 'syllabic' trochees (see Hayes 1995: 69, 125–82).

[35] I represent the foot structures of Sauzet and Golston as if they treat final consonants as not belonging to the preceding syllable at the point in a derivation where accentuation is assigned. This issue is not explicitly raised by Sauzet or Golston (although see Golston 1990: 82 n. 14), but the assumption made here is compatible with, and required by, their accounts.

[36] For words that are too short for the recessive accent rule to apply in the normal way (because they contain only a single foot) the high tone is simply associated with the first available syllable (see Sauzet 1989: 94–5).

For *non-recessive* words such as λιγυρός and λαιψηρῶν, Sauzet posits underlying accents.[37] These take precedence over the accent assigned by the recessive accent rule when they fall nearer to the end of the word than the position for recessive accentuation, but without changing the foot structure (Sauzet 1989: 103–6).

Both on Steriade's analysis and on those of Sauzet and Golston, the law of limitation is simply a side-effect of the rules assigning accents. All of these analyses therefore contribute to the discussion as to how to formulate the law of limitation, but the problem remains essentially unsolved as long as there is no real agreement on the details of the phonological analysis from which the law of limitation should follow. On the other hand, all the above-mentioned scholars agree that the accent rules assign recessive accentuation to words for which there are no underlying accents, or at least none nearer to the end of the word than the position for recessive accentuation. Radically different metrical analyses thus agree on a point to which we shall return in Chapter 5, the status of the Greek recessive accent as a 'default' accent, one that is assigned in the absence of overriding accents in a word's underlying form.

The ancient Greek accent continues to be of interest for current issues in linguistic theory. At present, there is debate over whether a phonological model of a fundamentally generative type (one involving the derivation of a surface form from an underlying form) needs to refer to forms intermediate between the ultimate underlying form and the surface form, and if so, how many levels are needed and whether they have special properties. Noyer (1997) contributes to this debate on the basis of Attic Greek accentuation and its interaction with syllabification, offering the answer that intermediate levels of representation are necessary, probably without special properties.

4.8 Conclusion

We cannot know as much about the accentuation of ancient Greek as native speakers of the language knew at least implicitly. However, we can perhaps now know more than has been known at any period since the collapse of the ancient Greek pitch accent, and several issues raised during the past millennium have now been resolved. Owing to the discovery of accented papyri, we can be sure that the accent system found in the medieval manuscripts was in place (though with some differences of notation) by the second century BC, and the fragments of ancient Greek music help to confirm this conclusion. In addition, the

[37] Golston does not discuss how accent is assigned to non-recessive words.

latter help to confirm the important role played by pitch as a phonetic correlate of the ancient Greek accent.

At the same time, new work on accent theory and typology has led new questions to be asked about the Greek accent system. Given recent evidence that languages employ principles of rhythmic grouping of syllables into feet, can we discover a foot structure for ancient Greek, and can so doing help us to understand the law of limitation? Furthermore, we now know that the term 'pitch accent' covers a number of rather different kinds of accent system: exactly what kind of 'pitch accent' did ancient Greek have? W. S. Allen (1973) and most recently Devine and Stephens (1994) have approached the prosodic system of Greek, including its accentuation, with detailed reference to typological studies.

Advances in our understanding of the history of Greek have also made it possible to ask historical questions that one could scarcely have asked two hundred years ago: how did the Greek accent system come to be the way it is; was the position of the accent always as difficult to predict as it appears to be in the system we know, or did it somehow become so? In Part II we shall be mainly interested in questions of history, but shall draw on the insights of theoretical and typological work where these can help us in our historical enquiry.

Part II

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5 INTRODUCTION TO PART II

> To affix these signs correctly is a work of no small difficulty, and for our guidance we find either principles so vague that they cannot be applied, or rules so numerous that they cannot be remembered.
>
> Chandler (1881), pp. v–vi.

5.1 Irregularity in Greek accentuation: why in need of explanation?

Students of ancient Greek are constantly perplexed by the difficulty of mastering the accents. In the British Isles, there has been a long-standing debate as to whether their learning is worth the effort involved. Nobody on either side of the issue would deny that this effort is indeed considerable.

But why should anybody expect mastering accents to be easy? People do not complain about having to learn for each word individually whether it contains the consonant *p*, and if so where in the word this consonant occurs; why do they complain about having to learn whether a word has an acute accent, and if so where the acute falls? The reason is hinted at in the quotation from Chandler heading this chapter. There seem to be *some* principles and rules behind Greek accentuation, but on trying to formulate them one finds that they have many exceptions, unless formulated in such a way as to be too vague to be useful or so numerous as to be practically a list of data. The presence or absence of an acute accent on the final syllable of a word is more predictable than the presence or absence of the consonant *p*, given some knowledge about the word—what part of speech it is and what its morphological structure is. For example, if a word is an adjective and has the suffix -ρο- it is likely to have an acute on the final syllable (as in ἐρυθρός 'red'). But this prediction is not always fulfilled, since there are exceptions (such as παῦρος 'small'). The Greek accent system thus holds out some hope of being easily learnable by the non-native student of the language, yet this hope is continually frustrated.

But this is not the place to worry about the plight of the student of Greek. Native speakers were clearly able to master the system, perhaps because they had the advantage of constant practice, which, as Koster (1962: p. vii) admonishes us, is 'the only way to become proficient in these matters', or perhaps because they understood the system rather

better than we do (if for the most part implicitly). But the existence of so much irregularity in what appears to be in some way a system is worth investigating for any insights that can be gained about either the synchronic properties or the prehistory of Greek accentuation.

5.2 Synchronic characteristics of the Greek accent system (i): the status of recessive accentuation

This and the following chapters are devoted to irregularity in various areas of Greek nominal accentuation and to an attempt to elucidate at least some of this irregularity in historical terms. Crucial to the sort of explanation offered will be certain synchronic properties of the Greek accent system. These concern the status of recessive accentuation as in some sense the most basic, most regular, or in the terms of some models 'default' accent pattern, and the interaction between Greek accentuation and morphology. We have already seen (§ 4.7 above) how these ideas are applied in recent work. In this and the following sections I collect the evidence for those structural aspects of the system that rest on a sufficiently firm foundation to be useful in historical work, and that the individual case studies will indeed exploit.

For some Greek words, the position of the accent is simply a characteristic of the word—it does not participate in any wider synchronic pattern. An example might be the word *ὁδός* 'way'. No group of words to which *ὁδός* clearly belongs (for example, nouns, second-declension nouns, second-declension feminine nouns, nouns terminating in *-δος*, words meaning 'way', etc.) can be said to have predominantly final accentuation. In other instances, by contrast, a word does belong to a wider group of words predominantly accented in the same way. For example, *Ἀττικός* 'Attic' belongs to a large class of non-compound[1] adjectives whose last derivational suffix is *-ικο-*; all of these are finally accented except for a few pronominal adjectives (*ἡλίκος* 'as great as', etc.: see pp. 94–5). In a rule-based phonological model such as those described in the previous chapter (§ 4.7), one might describe the accent of *Ἀττικός* as due to an underlying characteristic of the suffix *-ικο-*. The accent of *ὁδός*, on the other hand, would be due to an underlying characteristic only of the stem *ὁδό-*, not of any element that also characterized other words.

At first sight, a word such as *ἄνθρωπος* 'person' is clearly one whose recessive accent is characteristic only of itself; it does not fall under any wider pattern. And yet rather many Greek words whose accents are not obviously examples of any particular patterns happen to be recessive.

[1] A few compounds or prefixed forms in *-ικο-* (e.g. *ἀφύσικος* 'unscientific', *ὑπερσυντέλικος* 'pluperfect') are recessive, although most are finally accented.

Likewise, rather many words whose accents do seem to belong to wider patterns are also recessive. One might even suggest that the word ἄνθρωπος belongs to a wider group of words consisting of Greek words in general, and that these are predominantly recessive. Exceptions to this 'general pattern' abound, of course; some are individual words such as ὁδός while some are classes of words such as the adjectives in -ικο-.

It is not immediately obvious that thinking in terms of such a general pattern is in any way helpful. Knowing that Greek words are generally recessive does not help one to know that ἄνθρωπος conforms to this general pattern whereas ὁδός does not, any more than knowing that most dogs are not dangerous is helpful in a situation where what is crucial is whether a particular dog is dangerous or not. And yet if one were supplied with a list of dangerous dogs in the community, it would suffice to know about dogs not on the list that they were not dangerous. The general or 'default' rule about dogs would be that they are not dangerous; exceptions consisting of individual dogs or specific groups of dogs would need to be specifically included on the list. We have seen (§ 4.7) that several theoretical models of Greek accentuation treat the recessive accent as precisely a 'default' accent for Greek, the accent that is assigned if the underlying form of a word contains no information whose effect is to produce a non-recessive accent.[2]

Keeping a list of dangerous dogs is not the only way in which one could keep track of dangerous dogs. Another possibility would be to keep a list of non-dangerous dogs, or simply to keep an inventory of dogs including information about dangerousness. If one wanted to know how a particular person or community remembered about dangerous dogs, it ought to be possible to investigate the matter in some way: by asking people, inspecting their public records, noticing what sorts of mistakes involving dogs were made, and so on. The answer to such a question might or might not turn out to be a straightforward one, but it ought to be amenable to practical investigation.

Short of finding a way to revive native speakers of ancient Greek and subject them to various kinds of accentuation tests, we will probably never know for certain whether their knowledge of accents was significantly supported by an awareness of a general pattern that most Greek words are recessive. We can, however, bring indirect evidence of various kinds to bear on the question. This evidence comes from a range of phenomena, some synchronic and some diachronic, of a sort that tend to be discussed in studies of 'markedness'. The notion of markedness is at worst rather vague, and at best the term is used in a number of different

[2] See Kiparsky (1967: 77); Warburton (1970: 108); Sommerstein (1973: 133); Steriade (1988); Sauzet (1989); Halle (1997: 303–5); cf. Laum (1920: 22).

senses.[3] The various attempts to define the term do, however, share a common aim: to identify patterns that speakers of a language treat as in some way normal or basic—or 'unmarked'—for the language[4] and other, 'marked', patterns that they do not. It is not clear that the various phenomena which have been claimed to indicate markedness or its opposite indicate exactly the same thing or necessarily correlate with each other, but it will be instructive to see how the Greek recessive accent compares with these various indications of markedness or unmarkedness. It will be important to keep in mind the question we wish to answer: was the ancient Greeks' knowledge of accents supported by an awareness of a very basic pattern—albeit one with many exceptions and classes of exceptions—that Greek words are recessive?

5.2.1 The numerical preponderance of recessive words

We shall begin by adding some substance to the claim made above that 'rather many' Greek words are recessive. Frequency of occurrence of a pattern is certainly not sufficient, and it has been shown that it is not even necessary,[5] for there to be an awareness of its general validity. Recall that the fact that most dogs in a community are not dangerous does not prove that members of the community are aware of this fact or make use of it in keeping track of dangerous dogs (cf. Pinker 1999: 214). Moreover, one could keep track of dangerous dogs by keeping a list of non-dangerous dogs, even if non-dangerous dogs far outnumbered dangerous ones. However, most often a pattern that speakers of a language take to be basic or regular is indeed more frequent than competing patterns.[6] It is at least worth substantiating the impression that recessive words preponderate in Greek, not because such preponderance would answer our question in itself but because it may lend some plausibility to an answer based on other evidence.

In fact, in a random sample of 1,021 words taken from LSJ,[7] we find 667 recessive words (65%), 334 non-recessively accented words (33%) and 20 unaccented words (2%).[8] If instead of counting word types in a

[3] For a clear summary, see Hyman (1975: 143–9).

[4] I am not concerned here with the question of universal markedness.

[5] See Pinker (1999: 214–39), with further bibliography.

[6] On the relationship between markedness and frequency of occurrence, see Tiersma (1982); Bybee (1985: 74–7).

[7] The sample consisted of the last entry on every odd-numbered page. The last actual entry rather than the last headword was used in order not to bias the sample in favour of words more likely to appear as headwords (in particular, underived forms).

[8] Words were counted as recessive if they are recessive on the surface, i.e. if their surface accent falls as near to the beginning of the word as permitted by the law of limitation. 'Contracted verbs' were counted in their contracted forms (although LSJ list them in an uncontracted form). Thus, *τῑμῶ* 'honour' (listed as *τῑμάω*) was counted as non-recessive. One could argue that contracted verbs should have been counted as

dictionary we count word tokens in a text, we again find more recessive than non-recessive words. Thus, in the first fifty lines of text in Jones's Oxford Classical Text edition of Thucydides, there are 431 word tokens, of which 197 are recessively accented (46%), 62 are non-recessively accented (14%) and 172 are unaccented (40%).[9] When we count tokens, although there are still more recessive words, the proportion of recessive words is not as great as when we counted types. This result is due mainly to a number of very common words that are unaccented (e.g. τε, ἐκ, ὡς).

5.2.2 A tendency for loan words to be treated as recessive

Sommerstein (1973: 133), in arguing that recessive accentuation was an unmarked accentuation for Greek words, notes that loan words (as well as various other classes of words) are mostly recessive. When words are borrowed from one language into another, the borrowing language may retain the accentuation the words had in the source language. Alternatively, the borrowing language may change the accentuation in order to replace more unusual with less unusual accent patterns. If the accents of loan words are changed, the changes made should give a clue as to what were felt to be the normal accent patterns for the borrowing language. In English, for example, disyllabic nouns, such as *élbow* or *cábbage*, are usually stressed on the first syllable.[10] In French, native words are

recessive, since contraction clearly operated as a synchronic phonological rule after accent assignment (cf. Noyer 1997). However, counting contracted verbs as recessive would only strengthen the point being made here, and so I count them as non-recessive for the sake of a conservative estimate. Words that were counted as unaccented were (*a*) all forms of the article; (*b*) prepositions (those that occur in this count or the following count from Thucydides are ἀνά, ὑπέρ, ὑπό, πρός, ἐς, εἰς, παρά, ἐπί, πρό, διά, ἐκ/ἐξ, κατά, ἀπό, ἐν); (*c*) the proclitics εἰ, καί, ὡς, οὐ/οὐκ/οὐχ, ἀλλά, οὐδέ, μή; (*d*) enclitics and possible enclitics (those that occur are τε, μέν, δέ, γάρ, τις, μοι, εἰμί ('I am'), ἐστί, πω, γε). There has been some disagreement over exactly which forms should be counted as proclitic, especially as concerns the various forms of the definite article; see Vendryes (1904: 67–73); Postgate (1924: 61–3); Schwyzer (1953: 387); Bally (1945: 107–9); Sommerstein (1973: 136–47, 156–8); Devine and Stephens (1994: 356–61); Probert (2003: 138–42). The status of μέν, δέ, and γάρ as enclitics is disputed (and modern printed texts do not treat them as enclitics); see Vendryes (1904: 107); Devine and Stephens (1994: 354–5). Against δέ as an enclitic, see Io. Al. 31. 25–6 and (implicitly) Arc. 5. 7.

[9] Words were again counted as recessive if they are recessive on the surface. Inflected forms were counted as recessive if they are themselves recessive on the surface, regardless of the accentuation of other forms in the paradigm. In this respect the count of words in Thucydides differed from the count of words in LSJ, since words counted in LSJ were all citation forms. Instances where this difference affected the accent counted were rare but, for example, the aorist infinitive πιστεῦσαι 'trust' was counted as non-recessive in the count from Thucydides whereas in the count from LSJ the only form of the verb πιστεύω 'trust' that could have occurred was the recessive πιστεύω.

[10] For stress on the first syllable as the productive or regular, and in some traditions unmarked, stress pattern for disyllabic nouns in English, cf. Hyman (1975: 146).

stressed on the final syllable, and if they are borrowed into English this final stress may be kept (as in *crusáde*, *motíf*). For some words, however, this final stress is replaced by initial stress. The point may be illustrated by a number of English words whose stress C. Barber (1997: 131) mentions as having moved to the initial syllable between Shakespeare's time and the present day. All the disyllabic words included are words of ultimately Latin origin borrowed via French (the list also includes words that are not disyllabic, but these will not concern us here):

> This [the change of the verb *envy* from final to initial stress] illustrates a general tendency in English in recent centuries, namely for stress to be moved to the first syllable, especially in two-syllable words. In many Shakespeare passages, it is necessary to give second-syllable stress to such words as *advertise*, *aspect*, *authorise*, *canonise*, *character*, *compact* n., *contents*, *demonstrate*, *essay* n., *increase* n., *instinct*, *nobody*, *obdurate*, *persever*, *precinct*, *protest* n., *record* n., *sinister*.

Such changes in the accentuation of loan words help to establish that disyllabic words with the stress on the second syllable are not merely unusual from an English perspective; some sort of awareness that such words ought to be or are most regularly stressed on the first syllable motivates a change in their accentuation over time.

In order to use the accents of words borrowed into Greek as evidence about the accent patterns that were felt to be normal or regular for Greek, we must have information about the accentuation of the source languages. A language with which Greek was in contact and for which we have such information is Latin. The accentuation of Latin words borrowed into Greek has recently become a subject for debate (Clarysse 1997; Radt 1998, 1999; Kramer 1998), and the issues raised in this discussion need to be briefly addressed.

Wackernagel (1926: 57–9), in discussing the accentuation of Latin words borrowed into Greek, pointed out that in most cases Greek could preserve the position of the Latin accent without violating the Greek law of limitation and stated that on the whole Greek preserved the position of the Latin accent. He allowed for three types of exception to this general rule.

(*a*) Words with light penultimate syllable and heavy final syllable. These were accented on the antepenultimate syllable in Latin, where Greek did not allow an accent to fall in words whose final syllable was heavy. In Greek, these words generally received a recessive accent (e.g. *κεντυρίων* = Latin *centúriō* 'centurion').[11]

(*b*) Words that received a Greek recessive accent not coinciding with the Latin accent position, although an accent in the Latin position

[11] Words that ended in Lat. *-iă* but were assimilated to the Gk class of abstract nouns in *-ίᾱ* (e.g. *κουστωδίᾱ* 'watching', Lat. *custōdiă*) are counted in this category.

would have been phonologically possible (e.g. *μάκελλον* = Latin *macéllum* 'provision-market').

(*c*) Words with one of a small number of specific terminations that often receive a final accent in Greek (not coinciding with the position of the Latin accent); e.g. (i) words in *-ō(n)* (Greek *-ων*): *λεγεών*[12] (Latin *légiō* 'legion'), *Κορβιών* (Latin *Córbiō*); (ii) words in *-icus* (Greek *-ικος*): *Σαβελλικός* (Latin *Sabéllicus*).

Recently, Clarysse (1997) and Kramer (1998) have disputed Wackernagel's view that Greek often preserved the position of the Latin accent, contending instead that Greek simply applied the principles of Greek accentuation to all foreign words. Where Greek accented a Latin word on the same syllable as Latin, they see this coincidence as accidental. This position is, however, too extreme (see Radt 1998, 1999). For example, Arcadius (71. 21–2) comments on the special accentuation of one class of Latin loan words:

τὰ εἰς ΕΡΝΟΣ Ἰταλιωτικὰ παροξύνεται· Φαλέρνος πατέρνος.

Italic words ending in *-ερνος* have an acute on the penultimate syllable: *Φαλέρνος* [Latin *Falérnus* 'Falernian'], *πατέρνος* [Latin *patérnus* 'paternal']

The intermediate accentuation of words such as *Φαλέρνος* and *πατέρνος* does not, of course, violate the law of limitation. However, Greek non-compound adjectives ending in *-νος* are usually accented on the final syllable (see Chapter 8). Intermediate accentuation among nouns and adjectives terminating in *-νο-* is otherwise confined to the words *παρθένος* 'maiden' and *καρκίνος* 'crab' and to the class of nouns with suffix *-īνο-*, mostly denoting animals (e.g. *κορακῖνος* 'young raven').[14] The intermediate accentuation of *Φαλέρνος*, *πατέρνος*, and similar words does not follow from any principle of Greek accentuation but is due to the accentuation of Latin.

Words for which the position of the accent in Greek coincides with that of Latin cannot be used as evidence for our question. A recessive accent such as that of *φόρον* 'market-place' (Latin *fórum*) does not show that recessive accentuation was felt to be regular either for Greek words in general or for a class of Greek words to which *φόρον* could be taken to

[12] Also written *λεγιών*.

[13] The two inferior manuscripts B and C read *προπαροξύνεται* 'have an acute on the antepenultimate' (see Schmidt ad loc.). This is unlikely to be the correct reading if B and C both derive ultimately from M (so Egenolff 1887: 6), which reads *παροξύνεται* together with A and O. The variant *προπαροξύνεται* is most likely to be a mistake originating in a more immediate (lost) archetype of B and C.

[14] I discount words attested only in Hesychius (e.g. *στεργάνος* 'place for dung' at Hesychius *σ* 1758 Schmidt; cf. p. 4), adjectives originating as perfect participles in *-μένος* (e.g. *ἀρημένος* 'distressed'), and pronominal adjectives (*ἐκεῖνος* 'that', Doric *τοσσῆνος* 'so large').

belong. A non-recessive accent such as that of *πατέρνος* 'paternal' (Latin *patérnus*) also does not tell us that recessive accentuation was *not* felt to be regular here. The only relevant words are those for which the accent assigned by Greek falls on a different syllable from that assigned by Latin.

Of Wackernagel's three categories of deviation from the position of the Latin accent, the first has a different status from the other two. Words belonging to the first category (*κεντυρίων*, etc.) have changed the position of the accent in order to conform to the Greek law of limitation. The preference for recessive accentuation in such cases may point to recessive accentuation being treated as a basic or regular accent pattern for Greek. On the other hand, the recessive accent may here be due merely to a tendency to accent the closest possible syllable to the one that was accented in Latin without producing a phonologically impossible Greek form.[15]

Of more interest are cases in which a word has been assigned an accent in Greek in a non-Latin position even though a Latin-position accent would have been phonologically possible (as in *Σέκουνδος*, Latin *Secúndus*). Instances where it would have been possible for the accent to be assigned in Greek in a position closer to that of the Latin accent than actually happened, as in *λεγεών*, Latin *légiō*, are likewise pertinent. Only in these cases can we be sure that a word is being accented in Greek on the basis of some regularities of Greek accentuation, not merely having its accent kept as close as possible to the accent it had in Latin.

Ideally, a comprehensive list of such words would serve as a basis for determining what patterns emerge. But the evidence for the Greek accentuation of loan words is often contradictory (cf. Kramer 1998: 131). We rely almost totally on the manuscript tradition, where for words of this type variant readings are common, as are inconsistencies between different attestations of the same word. The whole subject needs detailed investigation, which will not be attempted here. Instead, I confine myself to listing those words cited and considered uncontroversial by Wackernagel (1926: 57–8), Schwyzer (1953: 395), Clarysse (1997), Radt (1998), or Kramer (1998) and for which the accent falls in Greek on a non-Latin syllable even though it is not forced to do so by the law of limitation. For these words either the law of limitation does not force a change from the position of the Latin accent or it would have been possible for the accent to remain closer to the Latin position.

[15] I allow this as a possibility but am sceptical about the plausibility of physical proximity *per se* as a principle governing the accentuation of loan words whose original accent is phonologically impossible in the borrowing language.

(*a*) Recessive accent in Greek:
Σέκουνδος (Latin *Secúndus*)
λούκουντλος (Latin *lucúnculus*, *kind of pastry*)
μάκελλον (Latin *macéllum* 'provision-market')
κωδίκιλλος (Latin *cōdicíllus* 'writing-tablet')
λίβελλος (Latin *libéllus* 'little book')
μάγιστρος (Latin *magíster* 'teacher')
πραίφεκτος (Latin *praeféctus* 'overseer')
Κούαρτος (Latin *Quártus*)[16]
(*b*) Non-recessive accent in Greek:
λεγεών (Latin *légiō* 'legion')
Κορβιών (Latin *Córbiō*)
βουρδών (Latin *búrdō* 'mule')
Σαβελλικός (Latin *Sabéllicus*)
Γερμανικός (Latin *Germánicus*)
Καμπᾱνός (Latin *Campā́nus*)
Νωλᾱνός (Latin *Nōlā́nus*)
Καισαριᾱνός (Latin *Caesariā́nus*)
Τραιᾱνός (Latin *Traiā́nus*)
Ἁδριᾱνός (Latin *Hadriā́nus*)
Καληνός (Latin *Calḗnus*)
Ῥωμύλος (Latin *Rṓmulus*)
κασσίς, *-ίδος* (Latin *cássis*, *-idis* 'metal helmet')

At first sight, these data do not obviously support the view that loan words from Latin systematically received a recessive accent. However, the words listed under (*b*), to which Greek has assigned a non-recessive accent, all have Latin terminations closely resembling Greek suffixes that are always or often accented (*-ών*, *-ικό-*, *-νό-*, *-ύλο-*, *-ίδ-*). Greek treats words of these terminations not as unanalysable (as one might expect for loan words generally) but as containing recognizable suffixes corresponding to Greek suffixes receiving an accent.[17]

[16] This last example needs to be regarded with caution. Since the *-u-* of *Quartus* is non-syllabic in Lat. but the form of the Gk alphabet used for the Koine had no way of unambiguously representing a non-syllabic *-u̯-*, *-ούα-* may be an attempt to represent an accented first syllable *wá*.

[17] Native Gk words in *-ων* are very often finally accented, although there are also recessive words. Non-compound (and most compound) Gk words with suffixal *-ικο-* are finally accented (other than pronominal adjectives such as *ἡλίκος* 'as great as', etc.: see pp. 94–5). The Gk adjectival suffix *-νο-*, together with its complex forms (other than the adjective-of-material suffix *-ινο-* and the complex form *-(σ)υνο-*, on which see Ch. 12), normally receives a final accent. Personal names in *-υλο-* (like most nouns and adjectives in *-υλο-*) generally have intermediate accentuation, while words with the suffix *-ιδ-* are always accented on that suffix unless the acc. sg. has a form in *-ιν* (so *ἀσπίς* 'shield', acc. sg. *ἀσπίδα* but *ἔρις* 'strife', acc. sg. *ἔριν*). Wackernagel's (1926: 58) view of the origin of

The words listed under (*a*) are much less amenable to interpretation as assimilated to well-defined Greek morphological classes.[18] The variety of terminations in loan words thus receiving recessive accentuation in Greek suggests that the most general way for Greek to change the accent of a Latin loan word was to make the word recessive: if a change was made, it was a change to recessive accentuation unless the word could be assimilated to a particular morphologically defined class associated with non-recessive accentuation.[19]

These findings suggest something of an answer to our question. In any language, as mentioned above, changes to the accentuation of loan words are likely to reflect the accentual regularities of the borrowing language. In Greek, we find on the one hand that non-recessive patterns of accentuation are treated as regular within certain morphological classes, but on the other that recessive accentuation enjoys a special status as the most *generally* regular pattern of accentuation. The notion of 'default' accentuation arising in some theoretical treatments thus turns out to match quite well the status of the recessive accent implied by the Greek treatment of Latin loan words.

final accentuation in loan words in *-ānós* and *-ηνός* (indigenous accentuation of words with similar terminations borrowed from some unspecified language of Asia Minor; cf. Schwyzer 1953: 395) is less plausible than that these words were simply assimilated to the Gk finally accented adjectives in *-νό-* (cf. Clarysse 1997: 178).

[18] Gk does not have many adjectives terminating in *-νδο-*. Those that do exist are finally accented: *χανδός* 'gaping wide, roomy'; *κονδός* 'short' (a variant spelling for *κοντός*); *κυνδός* 'exactly similar' (only at Hesychius *κ* 4565 Latte); *μυνδός* 'dumb'. The recessive accent of *λούκουντλος* and *μάγιστρος* could be interpreted as the normal Gk accentuation for words in *-τλο-* and *-τρο-*, but there are very few words in *-τλο-*, and most words in *-τρο-* are neuter. Of the few that are masculine, two that denote agents are finally accented (*ἰᾱτρός* 'doctor'; *δαιτρός* 'one who carves and portions out'), and one might have expected *μάγιστρος* 'teacher' to follow these rather than the semantically dissimilar *οἶστρος* 'gadfly', *κέστρος* 'bolt discharged from engines', *σεῖστρος* 'yellow-rattle', *χύτρος* 'earthen pot' (although the rare word *ἐδέατρος* 'one who tastes first' resembles *μάγιστρος* in semantics and accentuation). Gk words terminating in *-λλο-* are not consistent in their accentuation, although many are recessive. Gk ordinals similar to Lat. *quártus* 'fourth' are recessive (e.g. *τέταρτος* 'fourth'). Substantivized prefixed participial forms in *-το-* similar to Lat. *praefĕctus* are often recessive in Gk (cf. *σύγκλητος* 'senate'; *διάλεκτος* 'dialect').

[19] It may be significant that in a cautious list of 38 Semitic loan words into Gk compiled by Braun (1982: 25–6; my figure of thirty-eight does not count separately derivatives clearly or probably formed within Greek), 29 are recessive, only 8 are non-recessive, and one (*γαυλός* 'bowl'/*γαῦλος* 'round Phoenician merchant vessel') has different accents for different meanings. Of the eight that are non-recessive, three (*χιτών* 'tunic', *ἀρραβών* 'caution-money', and *σινδών* 'fine cloth') again end in *-ών*. However, we know too little about the exact routes by which these words entered Greek to know how they were accented in the source languages (and we would not necessarily have the relevant accentual information about the source languages).

5.2.3 The historical stability of recessive accentuation

In the previous section, I argued that the treatment of loan words can give an indication of the patterns of accentuation that are regarded as normal or regular in the borrowing language. The argument rests on the premise that changes in the accentuation of loan words are likely to be motivated by the fact that a word is accented more regularly with its new accentuation pattern than with its original one. In order to effect a change with such a motivation, speakers of the borrowing language need in some sense to be aware of the greater regularity of one accentuation pattern over another, rather as members of a community in which most dogs are not dangerous need to be aware of the non-dangerousness of most dogs in order to assume without further information (and perhaps mistakenly) that a newly arrived dog is not dangerous. It is not only loan words, however, whose accentuation may change over time, and it is worth asking whether a change of accentuation can in general be taken as evidence for the greater perceived regularity of the new accentuation for a given word over the old.

It is, I think, not possible to maintain in general terms that every change in accentuation constitutes a regularization.[20] However, certain types of change in accentuation may plausibly be taken as instances of regularization. In particular, regularization would appear to be involved if several accentuation patterns exist in a language but words change their accentuation to one already preponderant type on a fairly regular basis and in a seemingly haphazard way (i.e. not—or not only—as the result of a systematic change in one or more well-defined categories of word). Just such a situation appears to be identifiable for the prehistory of Greek.

Hirt (1929: 48–9) lists Greek words with Vedic or Germanic cognates whose accentuation (or implied prehistoric accentuation, in the case of Germanic) conflicts with that of Greek, omitting words whose Greek accentuation can be accounted for by well-defined processes such as the generalization of recessive accentuation in finite verb forms (see p. 87) or Vendryes's law (see p. 88). He finds 7 words for which Greek final accentuation corresponds to non-final accentuation elsewhere, and 29 for which Greek recessive accentuation corresponds to final accentuation elsewhere.[21] If these data are reliable, we must ask whether there is a reason for the disparity Hirt notes between the sizes of the two lists; but let us first examine the data.

[20] For example, some languages have undergone changes of accentuation that have introduced completely new accentuation patterns; the change from the early Lat. to classical Lat. accentuation is of such a type.

[21] Hirt (1929: 49) heads this second list 'Nichtendbetonung des Griechischen gegenüber Endbetonung in den verwandten Sprachen', but all the Gk words listed are accented recessively, not merely non-finally.

Omitting everything etymologically dubious[22] from Hirt's lists, two lists of convincing correspondences remain, as shown in Table 5(a)i, and the relative lengths of these still bear out Hirt's observation.

It is difficult to add many correspondences with secure etymologies to either of these lists.[23] Those correspondences I am aware of, shown in Table 5(a)ii, do not change the picture.[24]

We cannot of course know that in all these cases it is Greek that has innovated, but the disparity in the lengths of the two lists is striking. It is at least very plausible that this disparity is due to a tendency for Greek to innovate recessive accentuation more often than final accentuation on a haphazard basis. (Recall that *systematic* changes to recessive accentuation, such as the generalization of recessive accentuation in finite verbs, have been excluded from the preceding discussion.) If so, we may

[22] The equation between *μυχός* 'innermost part' and Skt *múkha-* n. 'mouth, face' is no longer tenable (see Chantraine 1968–80: 728). Mayrhofer (1986–2001: i. 603–4 s.v. *jyā́-*[2]) rejects the equation between *βίᾱ* 'force' and Skt *jyā́* f. '?deprivation' on the grounds that the Skt word does not mean 'force'. Frisk (1960–72: ii. 965) rejects the equation between *ὕμνος* 'hymn, ode' and Skt *sumná-* n. 'benevolence, devotion, prayer, hymn', perhaps rightly (cf. also Meißner 1995: 274 n. 136). Frisk also regards the correspondence *ἐλάτη* 'silver fir' : OHG *linta* 'linden tree' as possible but not certain (1960–72: i. 481); the etymology is not mentioned by Chantraine (1968–80: 332). An equation that is phonologically difficult although semantically attractive is *μάνδρᾱ* 'enclosed space, fold' : Skt *mandurā́* f. 'stable for horses'; for discussion see Frisk (1960–72: ii. 169) and Chantraine (1968–80: 663–4). The equation *νῆσσα* 'duck' : Skt *ātí-* f. *aquatic bird* is uncertain because of the uncertain referent of the Skt word, and because ON *æðr* 'eider duck', with Gmc cognates, offers an alternative etymology for Skt *ātí-* f. (Mayrhofer 1953–80: i. 72–3; Frisk 1960–72: ii. 317–18; Chantraine 1968–80: 752–3; Vries 1961: 681). Chantraine (1968–80: 1302) suggests that *ὦνος* 'price paid for a thing' might have been created within Gk rather than being genetically related to Skt *vasná-* n. 'price' (on the phonological difficulty of this equation see Bechtel 1914: 338; Penney 1978: 276 n. 36). Gk *ἰός* 'arrow' (< **isu̯-o-*) is not identical to Skt *íṣu-* m./f. 'arrow' (as Hirt in fact observed), since the Gk form is a thematization of the *u*-stem preserved in Skt (see Frisk 1960–72: i. 730). The equation between *βαίτη* 'shepherd's coat of skins' and Goth. *paida* 'tunic, vest' is accepted by Pokorny (1959: 92), but Frisk (1960–72: i. 210), and to a greater extent Chantraine (1968–80: 158), are non-committal. If the correspondence is valid, it involves the Gmc word being borrowed from Gk (as indeed Hirt and Pokorny recognized). Skt *véśa-* m. is accented on the first syllable in the meaning 'house', like its cognate *οἶκος*: see Mayrhofer (1986–2001: ii. 585).

[23] It must be remembered that if such correspondences involve Skt, the Skt word must be attested with an accent (normally in a Vedic text), and for a correspondence to qualify for inclusion in either of these lists the accentuation of the Gk word must differ from that attested elsewhere.

[24] If *δέλτος* 'writing-tablet' were cognate with Gmc forms such as ON *tjald*, OE *teld*, OHG, NHG *Zelt* 'tent', this would be a further correspondence with difference of accent (and would support the conclusion being drawn here). But I take it as certain that *δέλτος* is a borrowing from Semitic (cf. Phoenician *dlt*, Hebrew *delet̲* 'tablet'); see Chantraine (1968–80: 260), with bibliography. I do not take into account the correspondence *θυγάτηρ* 'daughter' : Skt *duhitár-* f. 'daughter', since the accentuation of the Greek form here could be due to Bartoli's law (see p. 88).

Table 5(a). *Correspondences between Greek and Sanskrit or Germanic, not agreeing in accent*

Final accentuation in Greek versus non-final accentuation elsewhere	Recessive accentuation in Greek versus final accentuation elsewhere
i. *Correspondences after Hirt (1929: 49)*	
1. *ἀγρός*, *ὁ* 'field' : Skt *ájra-* m. 'field'	*αὗος* 'dry' : OE *séar*, NE (archaic) *sear*, MHG, MLG *sōr* 'dry', Norwegian dialectal *søyr* 'withering of a standing tree'[a]
2. *ἑανός*, *ὁ* 'fine robe' : Skt *vásana-* n. 'garment'	*δῖος* 'heavenly' : Skt *divyá-* 'divine, heavenly'
3. *ἐθρίς* 'castrated ram' (only Hesychius *ε* 696 Latte) : Skt *vádhri-* 'castrated'[b]	*δύω* 'two' : Skt *duvā́* 'two'
4. *ἑκυρός*, *ὁ* 'father-in-law' : Skt *śváśura-* m. 'father-in-law' : OE *swéor*, OHG *swehur* 'father-in-law'	*ἕβδομος* 'seventh' : Skt *saptamá-* 'seventh'
5. *ὑμήν*, *ὁ* 'membrane' : Skt *syū́man-* n. 'band, thong'	*εἴκοσι* 'twenty' : Skt *viṃśatí-* f. 'twenty'
6.	*ἕως*, *ἡ* 'dawn' : Skt *uṣás-* f. 'dawn'[c]
7.	*θῆλυς* 'female' : Skt *dhārú-* 'suckling'[d]

[a] Gmc forms from C. C. Barber (1932: 129); cf. Frisk (1960–72: i. 189). The NE form is also spelled *sere*.

[b] The meaning 'castrated ram' assigned to Hesychius' *ἐθρίς* depends on Musurus' conjecture *τομίας* for *ταλμίας* at Hesychius *ε* 696 Latte. There is little doubt about this conjecture, however, since Hesychius' *ἴθρις· σπάδων, ἐκτομίας εὐνοῦχος* ('eunuch'; Hesychius *ι* 400 Latte) is almost certainly related, and since 'castrated ram' is plausible as a kind of ram for which there might be a single word (cf. English 'wether'). The accentuation of the Hesychius manuscript is unreliable (see p. 4), so one should not lay any weight on its accentuation of this word, but the correspondence with Skt *vádhri-* is unexceptionable.

[c] The Ionic form *ἠώς* has final accentuation agreeing with Skt. The recessive accentuation of the Attic form is clearly an innovation here (so Wackernagel 1914*a*: 49; Meißner 1995: 179 with n. 36; see also Solmsen 1901: 88). For the accents, see Io. Al. 35. 20–1.

[d] On the correspondence see, however, Mayrhofer (1986–2001: i. 789).

Table 5(a). (*Contd.*)

Final accentuation in Greek versus non-final accentuation elsewhere	Recessive accentuation in Greek versus final accentuation elsewhere
8.	*κόγχος*, *ὁ* 'mussel' : Skt *śaṅkhá-* m. 'conch shell'
9.	*κρέας*, *τό* 'flesh' : Skt *kravíṣ-*n. 'raw flesh'[e]
10.	*κύκλος*, *ὁ* (pl. *κύκλα*, *τά*) 'wheel' : Skt *cakrá-* n.(/m.) 'wheel'
11.	*κύμβος*, *ὁ* 'cup' : Skt *kumbhá-*m. 'jar, pitcher'[f]
12.	*μύσχος* 'genitals' (only Hesychius 1987 Latte) : Skt *muṣká-* m. 'testicle'
13.	*ὄγκος*, *ὁ* 'barb of an arrow' : Skt *aṅká-* m. 'curve, hook'
14.	*πάρος* 'formerly' : Skt *purás* 'before'[g]
15.	*πέδον*, *τό* 'ground' : Skt *padá-* n. 'step, pace'[h]
16.	*πέλεκυς*, *ὁ* 'axe' : Skt *paraśú-* m. 'axe'
17.	*πέρυσι* 'last year' : Skt *parút* 'last year'
18.	*πῆχυς*, *ὁ* 'forearm' : Skt *bāhú-* m. 'arm, forearm'
19.	*πρότερος* 'before' : Skt *pratarám* 'further on, in the future'[i]
20.	*τέκνον*, *τό* 'child' : ON *þegn* 'man, servant', OE *ðeġn* 'servant, warrior, man', OS *thegan* 'servant, child', OHG *thegan* 'servant, warrior'

[e] Chantraine (1968–80: 580), following Benveniste (1935: 31–2), questions the equation Gk *κρέας* 'flesh': Skt *kravíṣ-* n. 'raw flesh', but see Meißner (1995: 71 n. 25).

[f] Frisk (1960–72: ii. 48) regards the word as a 'Wanderwort' rather than an original IE form.

[g] From IE **pr̥H$_3$os* or **pr̥H$_3$es* (see Sihler 1995: 93).

[h] On the correspondence see, however, Mayrhofer (1986–2001: ii. 78–9).

[i] The accent implied by Gmc cognates, such as OS *furthor*, agrees with that of Gk (see C. C. Barber 1932: 121), but these go back to **pr̥tero-*, not **protero-* (see Pokorny 1959: 813).

Table 5(a). (*Contd.*)

Final accentuation in Greek versus non-final accentuation elsewhere	Recessive accentuation in Greek versus final accentuation elsewhere
21.	*ὕδρος*, *ὁ* 'water-snake' : Skt *udrá-* m. *kind of aquatic animal*[j]
ii. *Correspondences not mentioned by Hirt*	
22. *διπλός* 'double' : Goth. *tweifls*, OFri *twīfel*, OHG *zwīval*, *zwīfal*, *zwīvel* 'doubt'[k]	*γέρρον*, *τό* 'object made of wicker-work' : ON *kjarr* 'undergrowth, scrub'[l]
23. *εἰδώς* 'knowing' : Goth. *weitwōþs* 'witness'	*θέσις*, *ἡ* 'placing' : OS *dād*, OFri *dēd*, OE *dæd*, NE *deed*, OHG *tāt*, *dāt*, NHG *Tāt* 'deed'[m]
24. *ἐρωή*, *ἡ* 'motion, rush, force' : ON *rás* 'race', OE *rǣs* 'rush', NE *race*, MLG *rās* 'hefty current'[n]	*θήκη*, *ἡ* 'case, chest' : Skt *dhākā́*-m. 'receptacle'[o]
25. *μολγός*, *ὁ* 'bag made of ox-hide' : ON *malr*, MLG *male*, ME *male*, NE *mail*, OHG *malaha*, MHG *malhe* 'bag'[p]	*κύπη*, *ἡ* 'kind of ship; hut; hole' (only Hesychius *κ* 4634 Latte, *κ* 4647 Latte) : OHG *hūba*, MHG *hūbe*, NHG *Haube* 'cap'[q]

[j] I have not been able to verify the existence of Skt *udrā́* 'water-snake', which would provide a correspondence for Gk *ὕδρᾱ* 'water-serpent'. However, if *ὕδρᾱ* in Hirt's list is replaced by *ὕδρος* 'water-snake', this gives a valid correspondence with Skt *udrá-* m. *kind of aquatic animal*.

[k] The Gk form is not attested until the Roman period. The Gk and Gmc forms differ in the vocalism of the first element (**du̯i-* for Gk, **du̯ei-* for Gmc).

[l] The Gk form comes from **γέρσον*, the ON form from PGmc **kerzá-*, IE **gersom* or **ǵersom*. Frisk (1960–72: i. 300) assumes that the accentuation implied by ON is innovated (perhaps because of the commonly made assumption that neuter nouns were root accented in IE).

[m] The Gk and Gmc forms differ in ablaut, *θέσις* deriving from a pre-form with zero-grade root (**dʰHɪtis*), the Gmc forms from a pre-form with full grade root (**dʰ eHɪtis*); see Frisk (1960–72: i. 666–7); C. C. Barber (1932: 27).

[n] PGmc form **rǣ́sō* (C. C. Barber 1932: 51).

[o] Independent creations are, however, possible (Chantraine 1968–80: 434; Mayrhofer 1953–80: ii. 96).

[p] The Gmc forms derive from an IE pre-form with **-k-*, **mólko-*. The possibility that the *-γ-* of Gk indicates a borrowing has been considered in the light of Pollux' (10. 187) assertion that the word is Tarentine (see Frisk 1960–72: ii. 250).

[q] Skt *kū́pa-* m. 'hole, hollow, cave' agrees in accentuation with Gk but is an *o*-stem, not an *ā*-stem.

Table 5(a). (*Contd.*)

Final accentuation in Greek versus non-final accentuation elsewhere	Recessive accentuation in Greek versus final accentuation elsewhere
26. ῥοικός 'crooked' : ME *wrāh* 'obstinate', Swedish dialectal *vrå* 'unwilling, sullen'[r]	μήτηρ, ἡ 'mother' : Skt *mātár-* f. 'mother' : OE *mōdor* 'mother'[s]
27.	ὄλπη, ἡ 'leathern oil-flask' : OHG *salba*, NHG *Salbe*, OS *salā*, OE *sealf*(*e*) 'ointment'
28.	πότερος 'which of two' : Skt *katará-* 'which of two'[t]
29.	πτέρνη, ἡ 'heel' : Goth. *faírzna* 'heel'[u]
30.	ὕπνος, ὁ 'sleep' : OE *swefn,* OS *swēan* 'sleep'[v]
31.	χόρτος, ὁ 'enclosed place, farmyard, pasturage' : Goth. *gards* 'house, homestead', OS *gard*, OE *ġeard*, NE *yard*, OHG *gart* 'enclosure, yard, garden'[w]
32.	χαῖος, ὁ (or χαῖον, τό) 'shepherd's staff' : ON *geirr*, OHG/MHG/OS *gēr*, NHG *Ger*, OFri *gēr*, OE *gār* 'spear, javelin'[x]

[r] The Gmc forms go back to PGmc **wráiχa*, IE **u̯roiḱos* (see C. C. Barber 1932: 120; Frisk 1960–72: ii. 656).

[s] Beekes (1972: 45) regards Gk as continuing the original accentuation in the nominative of this word. He also regards the fixed root accent of dialectal Lith. *mótė* 'mother' as possibly due to original root accentuation in the nominative (1972: 62).

[t] Gmc forms such as Goth. *hwaþar*, OE *hwæðer* agree in accent with Gk, as noticed already by Verner (1877: 119).

[u] Other Gmc forms agree in accentuation with Gk: OHG *fersna*, MHG *vërse*, NHG *Ferse*, MLG *versene*, *verse* (C. C. Barber 1932: 62). On the initial *πτ-* of the Gk form, see Frisk (1960–72: ii. 612).

[v] Gk *ὕπνος* derives from a pre-form with zero-grade root (**supno-*), the Gmc forms from a pre-form with *e*-grade root (**su̯epno-*). Skt *svápna-* m. 'sleep' agrees in ablaut with Gmc (unless the Skt form has an *o*-grade) but in accent with Gk. An original *r*/*n*-stem is likely (see Frisk 1950; 1960–72: ii. 966 s.v. *ὕπαρ*, 971 s.v. *ὕπνος*).

[w] If the correspondence is exact, the pre-form for both Gk and Gmc is **g*^{h}*orto-*. But **g*^{h}*ord*^{h}*o-* is also a possibility for Gmc, and in Frisk's view (1960–72: ii. 1113) the more likely alternative. If the Gmc forms are from **g*^{h}*ord*^{h}*o-* then Gmc provides no evidence for the accent.

[x] If the Gk and Gmc forms are cognate, the pre-form was **ghaisos*. Frisk (1960–72: ii. 1061–2) describes the correspondence between the Gk and Gmc forms as 'vielleicht nicht zufällig'.

surmise that non-recessive words acquired recessive accentuation more frequently than vice versa rather as English past tense forms acquire weak inflection (with *-ed*) more frequently than they give up weak inflection in favour of strong inflection. In other words, recessive accentuation was the most regular accentuation pattern across the whole range of Greek words, as weak inflection is the most regular past tense formation across the whole range of English verbs. It does not follow that recessive accentuation was treated as regular within every morphological class of Greek word, and indeed we have already seen that it was not: recessive accentuation was treated as the most *generally* regular accentuation pattern.

5.2.4 The generalization of recessive accentuation in Lesbian

The Lesbian dialect generalized recessive accentuation to all or virtually all fully accented words (see pp. 72–3), and thus provides much stronger evidence than Attic and the Koine (the dialects to which most of our evidence on accentuation relates and to which the preceding section implicitly referred) that change to recessive accentuation was the likely direction for regularizing changes in Greek accentuation to take, in other words much stronger evidence that recessive accentuation was, again, treated as the most broadly regular accentuation pattern across the whole Greek vocabulary.

In terms of a model of Greek accentuation in which recessive accentuation is assigned by default to words whose underlying representations lack lexical accents (see pp. 118–20), the generalization of recessive accentuation in Lesbian may be described as resulting from the loss of all lexical accents in that dialect (so Halle and Kiparsky 1981: 174 n. 12).[25] The concept of lexical accent loss that may be articulated within such a theory thus matches rather well the traditional notion of 'regularization'.

[25] By exactly parallel reasoning Steriade observes (in a personal communication reported by Halle and Vergnaud 1987: 72 n. 9; Halle 1989: 165) that if a language with default accentuation on the initial syllable lost all lexical accents, a language with fixed initial accentuation would result. (So also, on Latvian, Halle and Kiparsky 1981: 174.) Halle (1989: 165–6) then uses the fact that a number of IE languages developed fixed initial accentuation as evidence that this was indeed the default accent pattern for IE. He recognizes that it is possible for accent systems to develop in more than one way, and that not all IE languages acquired fixed initial accentuation. Nevertheless, he claims that the number of IE languages that did so independently of each other supports his view of initial accentuation as the default pattern in IE.

5.2.5 The status of recessive accentuation: summary

We may now summarize the different types of evidence suggesting that recessive accentuation was treated as the most broadly regular accentuation pattern across the Greek vocabulary in ways that could influence the history of the language. Firstly, a point that need not be significant by itself but that lends some support to our conclusions based on other evidence: recessive words are more frequent than non-recessive words, both in a Greek word list and in their actual occurrences in texts. Secondly, there exist borrowings into Greek where one can verify that Greek has abandoned the accent position of the source language in favour of recessive accentuation (e.g. *μάγιστρος* 'teacher', Latin *magíster*). Significantly, this process is not confined to words with particular terminations but appears to have applied to a wide range of word shapes. Finally, two arguments suggest that non-recessive accentuation was historically less stable than recessive. Firstly, we can find more Attic or Koine words for which recessive accentuation corresponds to final accentuation in other Indo-European languages than words for which Attic or Koine final accentuation corresponds to non-final accentuation elsewhere;[26] this disparity is most plausibly explained on the hypothesis that Attic Greek was more prone to innovated recessive accentuation than to innovated non-recessive accentuation. Secondly, one Greek dialect abolished non-recessive accentuation altogether. Evidence thus converges from various different directions to support the notion that the Greek accentuation patterns were not all equal in status, and that the recessive pattern was treated as the most generally regular, or 'default', accent pattern. As we shall see, the hypothesis that recessive accentuation has such a status will allow a convincing account of various apparently disparate phenomena that otherwise resist explanation.

5.3 Synchronic characteristics of the Greek accent system (ii): the role of morphology

The second general point I shall accept as part of a working description of the Greek accentuation system is that morphemes have accentual properties. To put it differently, each morpheme is associated with a characteristic way in which it contributes to the accentuation of a word. What I take to be the fundamental generalizations are described in the following sections.

[26] I again discount finite verbs and other words for which a systematic explanation is available.

5.3.1 Inherently accented endings

In some types of paradigm, some of the endings are inherently accented. An inherently accented ending takes precedence over the accentual properties of any preceding elements. Thus, the genitive plural ending *-ων* is inherently accented in first-declension noun paradigms. First-declension nouns are consistently accented on the ending in the genitive plural, irrespective of the other elements in the word or the accentuation of the other forms in the paradigm (see pp. 66, 67).[27] The following discussion will be concerned largely with the principles on which accentuation is assigned when there is no inherently accented ending.

5.3.2 Importance of the last derivational suffix

In the absence of an inherently accented ending, derivational suffixes in particular, and above all the last derivational suffix in a word, play a role in determining the word's accentuation: non-compound words that end with the same derivational suffix tend to be accented in the same way as each other. Some derivational suffixes demonstrate this point with a high degree of consistency. Each of the following suffixes, for example, carries an accent whenever it appears as the last derivational suffix in a non-compound word:

-ικο- (*ἐριστικός* 'argumentative', *νομικός* 'relating to law', *φυσικός* 'natural' . . .)
-ισκο- (*ἀνθρωπίσκος* 'manikin', *παιδίσκος* 'young boy', *δεσποτίσκος* 'little master' . . .)
-αδ- (*φυγάς* 'fugitive', *Ἑλλάς* 'Greece', *ὁλκάς* 'trading vessel' . . .)
-ευ- (*βασιλεύς* 'king', *ἱππεύς* 'knight', *ἱερεύς* 'priest' . . .)

Each of the following derivational suffixes is unaccented. Whenever one of these suffixes appears as the last derivational suffix, the word as a whole is recessive:

-ιᾱ (*βασίλεια* 'queen', *ἀλήθεια*, 'truth', *ἀσέβεια* 'impiety' . . .)
-σι- (*γνῶσις* 'knowing', *ποίησις* 'creation', *ἅλωσις* 'capture' . . .)
-ος (*γένος* 'race', *τεῖχος* 'wall', *ὄνειδος* 'reproach' . . .)
-μα (*πρᾶγμα* 'matter', *κήρυγμα* 'proclamation', *ἄγαλμα* 'delight' . . .)

[27] For four first-declension nouns that exceptionally have the accent on the penultimate syllable in the genitive plural as if they were adjectives rather than nouns (and two of them are clearly adjectives used substantivally), see Ch. 2 n. 29. The nominative plural suffix *-αι* may in *ᾱ*-/*η*-stem noun paradigms be regarded as an inherently *pre-accented* ending; it forces the accent to fall on the syllable preceding the suffix (rather than in the position for recessive accentuation) unless the stem or its last derivational suffix is associated with final accentuation. (In such a case, the inherent accent associated with a derivational suffix takes precedence over that associated with an inflectional suffix because the accent associated with the derivational suffix comes later in the word than that associated with the inflectional suffix.) For other possible analyses of the accentual possibilities arising in *ᾱ*-/*η*-stem noun paradigms, see p. 67.

The suffixes in this latter group are not only unaccented but also, in Steriade's (1988: 280–1) terms, deaccenting. A word with one of these suffixes as its last derivational suffix not only has no accent on the suffix but is recessive, irrespective of the accentual properties of any other elements in the word. Notice in particular that, as already mentioned (p. 118), *βασίλειᾰ* 'queen' is derived from *βασιλεύς* 'king', *ἀλήθειᾰ* 'truth' is derived from *ἀληθής* 'true', and *ἀσέβειᾰ* 'impiety' is derived from *ἀσεβής* 'impious'. In each instance the form in *-ιᾰ* not only does not have the accent on the suffix *-ιᾰ* but also does not accent the immediately preceding element, i.e. the element that was accented in the base form. We now turn to the reasons why I have not given any examples involving unaccented derivational suffixes that are not deaccenting.

5.3.3 Unaccented derivational suffixes are all 'deaccenting'

It is, I believe, the case that *all* derivational suffixes that are unaccented are also deaccenting. If there were inherently unaccented derivational suffixes that did not cause deaccentuation, we would expect to find classes of nominal derivatives in which the derivational suffix carried no accent and the accent of the derivative was the same as that of the base word, irrespective of where the accent of the base word fell.[28] Let us imagine, for example, that there were a suffix **-*υν* with the relevant property. We would expect to find words like **ἀσπίδυν, a derivative of *ἀσπίς*, *-ίδος* 'shield', and **ἔριδυν, a derivative of *ἔρις*, *-ιδος* 'strife'.

Although a category of suffixes with the accentual properties of our invented **-*υν* exists in Sanskrit (Kuryłowicz 1958: 41, category III), there is no such category in Greek (Kuryłowicz 1958: 136). This is a striking fact about Greek: the accentual characteristics of the root and of all derivational suffixes other than the last are irrelevant for the accentuation of derived nouns and adjectives. As mentioned above, in certain inflectional classes some forms of the paradigm have an accent determined by the inflectional suffix, irrespective of the accentual characteristics of any morphemes in the stem (e.g. the gen. pl. of first-declension nouns), but derivational suffixes other than the last are never relevant.

5.3.4 Unaccented inflectional suffixes are never 'deaccenting'

By contrast with unaccented derivational suffixes, unaccented inflectional suffixes appear never to cause deaccentuation.[29] Unaccented case

[28] To find such classes among verbal derivatives is of course out of the question, due to the recessive accentuation of almost all finite verb forms.

[29] Steriade does suggest examples of inflectional suffixes that are both unaccented and deaccenting, the 'segmentally null vocative morpheme' and the inflectional suffixes of

endings such as the third-declension accusative singular ending *-α* do not cause a word to be recessive if it does not belong to a recessive paradigm. Thus, in the paradigm of *λαμπάς* 'torch', all case forms of all numbers have the accent on the element *-ας/-αδ-*; none of the case endings is accented, and none of them causes the form to be recessive: *λαμπάς*, *λαμπάδα*, *λαμπάδος*, *λαμπάδι*, *λαμπάδε*, *λαμπάδοιν*, *λαμπάδες*, *λαμπάδας*, *λαμπάδων*, *λαμπάσι*.[30]

5.3.5 Morphology and Greek accentuation: summary

There are two crucial points to be retained from this discussion. Firstly, morphological structure plays an important role in the accentuation of a Greek word. Secondly, the identity of the last derivational suffix is crucial in the accentuation of derived non-compound nouns and adjectives. Some derivational suffixes are inherently accented, and this inherent accent appears on the surface where the suffix appears as the last derivational suffix, unless an inherently accented inflectional

finite verb forms (1988: 281). However, recessively accented vocatives such as *πάτερ*, vocative of *πατήρ* 'father', are unproductive relics in Gk. Most vocatives are not recessive unless they belong to a paradigm whose nom. sg. and other nom. and acc. forms are recessive, and it seems better to treat vocatives such as *πάτερ* as exceptions rather than the rule (cf. also p. 67 with n. 31). The very strong generalization that finite verb forms are usually recessive, on the other hand, is clearly a synchronically significant aspect of the system, and at first sight seems appropriately expressed in terms of deaccentuation caused by relevant inflectional suffixes. Thus, a verb derived from a noun, such as *ἐβασίλευε* 'he was king' (3rd person sg. imperfect), would have lost the accent of the suffix *-ευ-* (the accent that surfaced in the noun *βασιλεύς* 'king') as a result of the deaccenting property of the inflectional suffix *-ε* (example from Steriade 1988: 281). However, the recessive accentuation of most finite verb forms is most naturally taken as a generalization about finite verb forms, rather than as a characteristic of every finite verb inflection independently. For this reason, I think it better to describe deaccentuation as following (subject to some exceptions) from the morphosyntactic information that a form is a finite verb form rather than from a characteristic of individual inflectional suffixes.

[30] The accentual behaviour of Gk derivational suffixes (the last of which determines the accentuation of the whole stem) would follow from an analysis such as that which Halle and Mohanan (1985: 68–72) and Halle and Vergnaud (1987: 85–6) develop for Vedic accentuation if all derivational suffixes are regarded as cyclic in Gk, while the non-deaccenting property of Gk inflectional endings will follow if inflectional suffixes are non-cyclic. If an account along these lines is adopted, however, Gk accentuation differs from that of Vedic in that inherently accented inflectional suffixes (e.g. the *ᾱ-/η*-stem noun genitive plural ending *-ων*) are accented regardless of whether they are preceded by cyclic suffixes, and whether any such suffixes are underlyingly accented or unaccented. This point would follow if the accent rules for Gk place stress (in the terms of Halle and Mohanan and Halle and Vergnaud) on the inherently accented syllable nearest to the end of the word, not the one nearest to the beginning. (For a somewhat different application of the theory of Halle and Vergnaud (1987) to Gk, treating *all* Gk suffixes as cyclic, see Hutton 1995: 92.) For present purposes, however, the crucial point is the effect that the rightmost derivational suffix has on the surface accentuation of an ancient Gk word, not the way in which this effect might be implemented in a theoretical analysis.

suffix follows. For words whose last derivational suffix is not inherently accented, a recessive accent surfaces in forms with no inherently accented ending: in the terms of Steriade's (1988) model, unaccented derivational suffixes are deaccenting. Since no paradigm has inherently accented inflectional suffixes in all its forms, the last derivational suffix crucially determines the accentuation of at least some forms in the paradigm of every derived noun or adjective.

Like other morphemes, a root may be inherently accented, but it follows from what has just been said that an inherent accent belonging to a root will only be apparent where there is no derivational suffix. Thus, the underived noun *πούς* 'foot' is non-recessive (it has an acute accent, not a circumflex). The diminutive *πόδιον* 'little foot' formed on the same root, however, has an unaccented derivational suffix and is recessive. On the other hand, *ποδικός* 'of a metrical foot' has an accented derivational suffix and is accented on that suffix. The accentuation of the base word does not affect that of either kind of derivative, and cannot be deduced from that of any derivative.

5.4 Exceptions to morphologically conditioned accent rules

Suppose that we adopt as a working hypothesis, as I have proposed to do, that the accentuation of a Greek noun or adjective with one or more derivational suffixes depends on the accentual properties of the last derivational suffix unless there is an inherently accented inflectional ending. If a word has a final accent, then *ex hypothesi* we can expect either the inflectional suffix or the last derivational suffix in the word to be responsible. If so, the relevant suffix ought to induce a final accent when it turns up near the end of other words.

Let us test this prediction for words with the suffix *-ρο-* as their last derivational suffix. It is clear that none of the inflectional suffixes of second-declension nouns, or of first- and second-declension adjectives, is inherently accented, since none of these endings receives an accent on (or adjacent to) itself regardless of the accentuation of the rest of the paradigm. In what follows we shall forget about the possibility of inherently accented inflectional suffixes, since the paradigms under discussion will be those of second-declension nouns and of first- and second-declension adjectives.

Given that inherently accented endings are not in question, we must focus on the derivational suffix *-ρο-*. Our hypothesis would predict that either all or no words with *-ρο-* as last derivational suffix have final accents. A cursory inspection of a corpus of words ending in *-ρος* and *-ρον*, such as that in Buck and Petersen's reverse index (1945: 315–46), reveals that this prediction is simply not fulfilled—even if we exclude all words in which *-ρο-* is not a suffix and, of course, all compounds.

A large proportion of words with *-ρο-* is finally accented, but a sizeable minority is recessive.

One could stipulate that we are dealing with (at least) two different *-ρο-* suffixes—an inherently accented one and an inherently unaccented one. If different suffixes are involved, however, we might expect to find some evidence for their distinction apart from accentuation. As we shall see, it is not obvious that the finally accented words with *-ρο-* can be consistently separated from those with recessive accentuation by any characteristics (formal or functional) apart from accentuation.

Other suffixes present similar challenges. In the following chapters I examine some problems of the kind just mentioned, illustrating them with data taken from words with a range of different suffixes. The next four chapters are devoted to the accentuation of words with various suffixes (*-ρο-*, *-το-*, *-νο-*, *-λο-*) that are found on both adjectives and nouns. The rest of the current chapter is devoted to a statement of the particular problem that the case studies on words in *-ρο-*, *-το-*, *-νο-*, and *-λο-* chiefly address, and to a survey of previous work relating to this problem.

5.4.1 Adjectives and nouns formed with the same suffix

A number of derivational suffixes appear to form both adjectives and nouns in Greek, but the adjectives may tend to have one kind of accent whereas the nouns more often have another. In particular, several suffixes of the form -C*ο*- (where C denotes any consonant) are found to form adjectives with final accents but nouns that are often recessive. The suffixes *-ρο-*, *-το-*, and *-νο-* form adjectives that almost all have final accentuation (e.g. *λιγυρός* 'shrill', *κλυτός* 'renowned', *ἁγνός* 'holy'); the accentuation of adjectives in *-λο-* is less consistent than that of adjectives in *-ρο-*, *-το-*, and *-νο-*, but it is still predominantly on the final syllable (as in *τυφλός* 'blind').[31] Nouns formed with these suffixes are, however, often recessive (e.g. *ὄμβρος* 'storm of rain', *πλοῦτος* 'wealth', *κύκνος* 'swan', *πτίλον* 'soft feathers, wing').

At first sight, it might seem appropriate to separate adjectival *-ρο-*, *-το-*, *-νο-*, and *-λο-* (all inherently accented) from substantival *-ρο-*, *-το-*, *-νο-*, and *-λο-* (inherently unaccented). However, for all these suffixes some nouns have final accentuation, not recessive (e.g. *ἀγρός* 'field', *φυτόν* 'plant', *πλυνός* 'wash-trough', *δᾱλός* 'firebrand'). For *-το-*, finally accented nouns are in fact more numerous than recessive ones (see Table 7(b)).

[31] The intermediately accented adjectives in *-ιλο-* and *-υλο-* (e.g. *ποικίλος* 'many-coloured', *στωμύλος* 'talkative') constitute a set of exceptions. I have already mentioned that intermediate accentuation in such cases is likely to be secondary and to be due at least ultimately to Wheeler's law (p. 92). The synchronic distribution of intermediate accentuation in these categories will be discussed in more detail in Ch. 9.

It would seem desirable to find explanations both in historical and in synchronic terms for the recurrence of the pattern in question across several different suffixes. Merely stating that there are two *-ρο-* suffixes, an inherently accented one forming adjectives and an inherently unaccented one forming nouns, and two *-το-* suffixes with the same properties, and so on, would be to assume that the recurrence of the same pattern in all these types of word is coincidental. Moreover, some explanation for the exceptions to our pattern (e.g. finally accented nouns such as *ἀγρός* 'field', *φυτόν* 'plant', etc.) would be required.

It is worth asking how many *-ρο-* (and *-το-*, *-νο-*, and *-λο-*) suffixes should be assumed historically and how many synchronically. If all the *-ρο-* suffixes have a common ancestor, how should the diversity in their accentuation be explained? If there is only one *-ρο-* suffix from a synchronic point of view, can the accentual differences between different words with *-ρο-* be reconciled with the substantial evidence that morphemes have characteristic accentual properties? Exactly similar questions should be asked for *-το-*, *-νο-*, and *-λο-*.

5.4.1.1 History of the question

There has been a substantial amount of work bearing on the accentuation of the second-declension or thematic suffixes mentioned above, and on the relationship between the accentuation of nouns and that of adjectives. Work on the accentuation of thematic nouns and adjectives can be divided into (*a*) purely descriptive statements and (*b*) treatments that aim to account for the descriptive facts in terms of a larger theory. I postpone for the time being discussion of purely descriptive accounts, taking the basic description just given as adequate for immediate purposes, but shall examine descriptive claims in detail when investigating individual suffixes.

Studies aimed at explaining rather than simply describing patterns of Greek accentuation normally involve a comparative perspective, since it is agreed that Greek to some extent preserves Indo-European patterns of accentuation. The development of Greek accentuation ought therefore to be clarified somewhat on the basis of what can be deduced about Indo-European accentuation by comparison with Sanskrit, Balto-Slavonic, and Germanic.

The unpredictability of nominal accentuation in the Indo-European languages that preserve a free accent is one of the central problems of Indo-European accentology. There have been various attempts to derive the unpredictable systems of nominal accentuation in Greek, Sanskrit, and Balto-Slavonic from a predictable system in Indo-European. Studies relevant to the accentuation of words with our suffixes include investigations of thematic nominal forms, and of nominal forms in general, as well as those relating to specific suffixes. Four basic positions have been held.

(*a*) Individual Indo-European suffixes had their own accentual characteristics, and there were rules determining which accent prevailed in words with two or more inherently accented elements, as well as 'default' rules assigning accents to words that lacked any inherently accented elements. This position corresponds to current thinking in generative phonology,[32] but specific examples of suffixes that generally did or did not carry the accent had been identified as early as Bopp (1854*a*).[33] Bopp (pp. 166–7) regarded Indo-European *-*ro*-, for example, as normally carrying the accent regardless of whether this suffix formed adjectives or nouns. Non-finally accented forms with the suffix *-*ro*- were anomalous, whether adjectives or nouns. It appears that for Hirt (1929: 220), fully fledged thematic suffixes such as -*ro*-, -*to*-, -*no*-, and -*lo*- were accented whereas the thematic vowel as a device for thematizing an existing athematic form was unaccented.

(*b*) In Indo-European, non-final accentuation was a noun marker whereas final accentuation was an adjective marker (Brugmann 1906: 27; Kuryłowicz 1935: 186–200).[34]

(*c*) In Indo-European, verbal abstracts (*nomina actionis*) were characterized by root accentuation, nominal forms denoting agents by final accentuation (Loewe 1929: 47–8; Hirt 1929: 220–1).[35]

(*d*) According to Kuryłowicz in his later works (1958: 35–69; 1968: 38–56), Indo-European nominal paradigms all originally had mobile accentuation. At some critical period, accentual mobility was given up in many paradigms. Derivatives whose derivative character was still synchronically felt now generalized final accentuation, while those that had acquired secondary functions and were no longer felt to be derivatives generalized non-final accentuation. A special case of this procedure arose when the primary function of a class of derivatives was to form adjectives but they could secondarily acquire substantival function. For some suffixes, therefore, finally accented adjectives came to contrast with non-finally accented nouns.[36]

For Kuryłowicz, derivatives could continue to acquire secondary functions after the period at which many paradigms gave up accentual

[32] See e.g. Kiparsky and Halle (1977); Halle and Kiparsky (1981); Steriade (1988); Halle (1997).

[33] A clear statement of this view is also given by Bally (1945: 47–8).

[34] Brock (1961: 22) assumes that at least *thematic* adjectives originally all had a final accent; those that were substantivized tended to become recessive.

[35] For Hirt, this situation arose by secondary semantic developments after accents were assigned according to system (*a*).

[36] A similar suggestion was made tentatively by Brugmann (1906: 28), who was, however, less confident than Kuryłowicz that such a procedure would naturally result in association between substantival function and root accentuation.

mobility, but in such cases they retained their final accentuation. New derivatives could then be created with secondary functions on the model of either finally or non-finally accented existing derivatives (see esp. Kuryłowicz 1968: 51). The actual distribution of final and non-final accentuation inherited by the daughter languages did not, therefore, correspond exactly to the division between words retaining their primary functions and those with secondary functions.

Kuryłowicz's account then involves a second series of analogical processes operating within Greek at the time when the law of limitation came into force. The law of limitation ensured that there were at most three syllables on which a word could be accented. For words in which the final syllable was heavy, however, only the last two could be accented. A form such as *ἀνθρώπους* 'men' (acc. pl.) was ambiguous between recessive and intermediate accentuation, as was one such as *ἀσπιδίσκους* 'little shields' (acc. pl.), *ἀνθρώπους* in fact belonging to a recessive paradigm (cf. nom. sg. *ἄνθρωπος*) but *ἀσπιδίσκους* to an intermediate one (cf. nom. sg. *ἀσπιδίσκος*). The accentual ambiguity of *o*-stem case-forms with heavy endings gave rise to the loss of intermediate accentuation and its replacement by recessive accentuation in some words, and in fact precisely in those words that were not felt synchronically to be derivatives. In this way Kuryłowicz explains the recessive accent of Homeric *ἀνδρόμεος* 'made of man', which he regards as having lost its derivative character, as contrasted with the penultimate accent of Vedic adjectives having the corresponding suffix *-máya-* (Kuryłowicz 1958: 114; 1968: 90–1). Synchronically underived *o*-stem words with final accent, such as *ζυγόν* 'yoke', are regarded as well preserved in Greek (Kuryłowicz 1958: 114; 1968: 91).[37] Kuryłowicz's series of purely Greek analogical changes again ceased to operate after a limited period, so that later semantic developments could obscure the original situation.

Some scholars[38] derive situation (*b*) or (*c*) from an earlier system in which nominal paradigms all had mobile accentuation; such an early situation is essential for Kuryłowicz's account (*d*).

Systems (*b*) and (*c*) have sometimes been combined. Brugmann (1906: 27) implicitly regards *nomina agentis* of the type *τομός* 'cutting, sharp' or *φορός* 'bearing' as all originally adjectives, by contrast with original *nomina actionis* of the type *τόμος* 'cut, slice' or *φόρος* 'tribute', which are nouns. For Brugmann the contrast between finally accented adjectives and root-accented nouns appears to have arisen first in pairs such as *τομός* : *τόμος* and *φορός* : *φόρος*, together with pairs of the type represented by Skt *bhr̥tá-* 'carried' : *φόρος* 'tribute'. Following these old patterns, he envisaged that finally accented adjectives could

[37] On the similar analogical changes Kuryłowicz assumes for *ā*-stems, see pp. 295–6.
[38] Hirt (1929: 220–1), with reservations; Loewe (1929: 46–8).

be substantivized by shifting the accent, both in Indo-European and in the daughter languages; thus δόλιχος 'racecourse' would have been produced in Greek by substantivization of δολιχός 'long'. The semantic range of nouns that could be formed on this principle was extended from original *nomina actionis* to all nouns. This procedure was made possible by the fact that some old *nomina actionis* had changed their meaning (e.g. γόνος 'generation' → 'child').

Similarly to Brugmann, Loewe (1929: 48) argues that the types τομός 'cutting, sharp' and τόμος 'cut, slice' became models for the accentuation of other nominal forms. Thematic adjectives usually followed the type τομός 'cutting, sharp', because words of this type were adjectives. However, he argues that *some* thematic adjectives acquired root accents (e.g. νέος 'new' : Skt *náva-* 'new').

Of the four approaches outlined above, that of the later works of Kuryłowicz (*d*) is the only one which makes a serious attempt to explain why the apparent semantic and morphosyntactic distinctions between finally and non-finally accented nominal forms (e.g. the distinction between adjectives and nouns) have obvious exceptions. A drawback of Kuryłowicz's approach is that it is apparently unfalsifiable, since the proposed accentual distribution produced by the loss of accentual mobility in Indo-European or by the law of limitation in Greek can be obscured to any degree by secondary semantic developments, and Kuryłowicz produces no evidence independent of accentuation for the time at which a word lost its 'derivative' character. The results of my case studies are, as we shall see, in agreement with Kuryłowicz's view that the acquisition of secondary functions can lead to the acquisition of recessive accentuation in Greek. I shall, however, disagree with his view that the relevant developments were produced by certain specific catastrophes (loss of accentual mobility in Indo-European; the development of the law of limitation in Greek) and offer what one might call a more uniformitarian account. I shall also argue that finally as well as intermediately accented *o*-stems could lose their non-recessive accentuation within Greek itself.

We have already seen (p. 107) that Lubotsky (1988), following a suggestion by Kortlandt (1986: 158–9), attempts to find correlations between the accentuation of nominal forms in Indo-European languages and the phonetic features of consonants they contain. Lubotsky (1988: 135–6) notes, as have others, that almost all adjectives formed with the suffix *-ρο-* have a final accent, but that the accentuation of the nouns is far less predictable. Similar observations are made for *-νο-* (1988: 134–5) and *-λο-* (pp. 131–2).[39] Lubotsky assumes that since final

[39] Lubotsky (1988: 136–7) regards the accentuation of words with suffix *-το-* as totally predictable (see pp. 183–4).

accentuation of adjectives formed with -*ρο*-, -*νο*-, and -*λο*- was productive in Greek, the Greek finally accented adjectives with these suffixes cannot tell us anything about the accentuation of the relevant types of adjective in early Indo-European: the pattern that became productive may have obscured the original situation. Greek neuter *o*-stem nouns are regularly recessive, in Lubotsky's view, and for this reason he regards these nouns too as unable to reveal anything about Indo-European patterns of accentuation (1988: 125–6; cf. pp. 163–4 below). On the other hand, he regards the distribution of finally and recessively accented non-neuter nouns as a very old survival.

Lubotsky's method presupposes that the distribution of final and recessive accents among the non-neuter nouns formed with -*ρο*-, -*νο*-, and -*λο*- could not have developed or been further developed or modified within Greek, an assumption that we shall see is challenged by my case studies of words with these suffixes (and with -*το*-). On the other hand, Lubotsky rightly recognizes that the label 'ancient Greek' stands not for a synchronic unity but for many centuries in the history of a language. Although he assumes that the distribution of accents in categories where no principle seems discernible was inherited, in those categories that do follow an obvious accentual principle he assumes that this consistency is due to an innovation of Greek. In support of this view he makes the following observation:

> Already in prehistoric times Greek had generalized a uniform accentuation for many categories and suffixes. . . . There are several indications that this process of generalizing a single accentuation pattern for every category went on in historical times. A good example is the suffix of nomina actionis -*μο*-, which shows both types of accentuation in Homer but is almost exclusively oxytone in later texts. (Lubotsky 1988: 121)

This observation suggests that there may be value in comparing patterns of accentuation in sections of the Greek vocabulary that are first attested at different periods. If we find that words which entered the language at different periods seem to show different patterns of accentuation, such a correlation between date and accentuation will require an explanation, whether that which Lubotsky assumes or some other one. Some attention shall be paid to this question in the case studies that follow.

6 WORDS WITH SUFFIX -ρο-

6.1 Formation

Greek inherited from Indo-European an adjectival suffix *-*ro*- (as in κῡδρός 'glorious, renowned'). This suffix has long been identified as standing in a special relationship to a number of other Indo-European suffixes, especially *-*i*-, *-*u*-, *-*ont*-, *-*es*-, *-*ē*- (the 'stative' suffix), *-*mo*-, and *-*no*-.[1] These suffixes are commonly known as 'Caland suffixes' after Wilhelm Caland who in two short notes made the first observations in this area (1890; 1892).[2] The relationship between Caland suffixes was originally viewed in terms of substitution. Thus, an adjective formed with -*ro*-, e.g. κῡδρός 'glorious, renowned', would substitute -*i*- for -*ro*- in composition, as in κῡδι-άνειρα 'bringing men glory'. More recently, scholars have begun to look at the same phenomena from a somewhat different angle. On a more modern view the essential characteristic of Caland suffixes is, as Nussbaum (1976: 5) puts it, 'the statistically significant number of roots which in fact make sets of derivatives with the closed set of Caland suffixes'.

Thus, if a -*ro*- adjective is attested for a particular root, it is particularly likely that we will find (in some Indo-European language or languages) other derivatives on the same root with one or more of the other Caland suffixes. Similarly, if there is a compositional form in *i*-, or a *u*-stem adjective, we are likely to find derivatives with some of the other Caland suffixes: a -*ro*- adjective, an *s*-stem noun, etc.

It is doubtful to what extent 'Caland's law' remained a productive principle of word-formation in Greek (so Meißner 1995[3]). It is certainly the case that many of the Greek adjectives with -ρο- were created within Greek, without the existence of any other 'Caland' forms being implied. Thus, σιωπηρός 'silent' is built on the stem of σιωπή 'silence'; there are no other Caland forms. But there is no reason to treat the -ρο- suffix here as fundamentally different from 'Caland -ρο-'. While Caland's law may not

[1] Nussbaum (1976) labels the last two 'marginal members' of the Caland system, arguing that they differ from the central members in being attested less commonly as primary suffixes within Caland systems but more commonly in 'complex Caland formations', i.e. formations in which one Caland suffix has been added after another instead of directly to a root (see esp. 1976: 74). We shall have occasion to return to this notion in Ch. 12 (see pp. 282–3).

[2] A more up-to-date presentation of 'Caland' phenomena is given by Risch (1974: 65–112). The subject is studied in detail by Nussbaum (1976) and Meißner (1995; 1998).

[3] Meißner's conclusions are based on a study of *s*-stem formations in Greek.

have remained productive, the adjectival suffix *-ρο-* did remain at least mildly productive in Greek of the historical period.

The suffix *-ρο-* also appears in various extended forms in which the suffix proper is preceded by a vowel, e.g. *-αρο-*, *-ερο-*, *-ηρο-*, *-υρο-*: *στιβαρός* 'strong, stout' (*στείβω* 'tread on'); *σφαλερός* 'likely to make one stumble' (*σφάλλω* 'make to fall'); *αἱματηρός* 'bloodstained' (*αἷμα*, gen. *-ατος* 'blood'); *φλεγυρός* 'burning' (*φλέγω* 'burn'). These extended or complex forms of the suffix originated at least in part with forms in which the vowel belonged to the stem, e.g. *χαλαρός* 'slack' (*χαλάω* 'slacken'); *στυγερός* 'hated, hateful' (*στυγέω* 'hate'; *στύγος*, *-εος*, *τό* 'hate'); *ἀνθηρός* 'flowery' (*ἄνθη* 'flower'); *λιγυρός* 'clear, shrill' (*λιγύς* 'clear, shrill'; cf. Chantraine 1933: 226–35).

Nouns as well as adjectives may have the suffix *-ρο-*. Where we can see how one of these nouns with *-ρο-* originated within Greek, it was created by the simple use of an adjective as a noun. Adjectives could easily be used as nouns on an *ad hoc* basis, by being placed in a syntactic position that forced them to be interpreted as nouns with some contextually appropriate referent. But some of these substantivized adjectives became lexicalized as nouns, acquiring fixed meanings as nouns. Thus, the adjective *ἱερός* 'holy' gave rise to the nouns *ἱερόν* 'temple' and *ἱερόν* 'offering' (the latter usually used in the plural).[4] It is standardly assumed that at least some of the *-ro-* derivatives that are only attested in the function of nouns likewise originated as substantivized adjectives.[5]

While many of the nouns with *-ro-* (or its developments) found in Indo-European languages are clearly substantivized adjectives, and many others may be even in the absence of direct evidence, some nouns with *-ρο-* were certainly inherited by the daughter languages *qua* nouns. Nussbaum (1976: 109–10) argues that some of these nouns are fundamentally different from the adjectives with *-ro-*:

> it is impossible to deny that the formant -ro- had more than one function and belonged to more than one derivational pattern already in PIE. On the one hand . . . a category of -ro- stem nouns must be recognized. So RV kṣu-rá-/Gk. *ξυρόν* (cf. *ξύω*), *δῶρον*/tur/darŭ (*δω-*, dā-, etc.), *ὄρθρος* "dawn" (cf. RV várdhate probably), *τάφρος* "ditch" (*θάπτω*), L. stuprum (stupere/*τύπτω* as above), etc. An entirely distinct category is the large group of (Caland) -ro- adjectives and this distinction is certainly already PIE. There is no reason to think that the -ro- substantives are substantivized adjectives and, indeed, such a view is practically excluded by the fact that these -ro- substantives do not belong to Caland systems. Further distinguishing the two groups is a distributional factor.

[4] For the purposes of the statistics given later in this chapter, I count these as a single noun with two meanings.

[5] So e.g. Nussbaum (1976: 59), on *γαμβρός* 'brother-in-law, son-in-law'.

The nominal type dō-ro- is virtually restricted to verbal roots while systems of Caland adjectives are certainly not.

Nussbaum can thus distinguish his forms with non-Caland *-ro-* from those with Caland *-ro-* by means of three criteria: (*a*) the forms with non-Caland *-ro-* are nouns, not adjectives; (*b*) they do not belong to Caland systems; (*c*) they are virtually restricted to verbal roots.

There are certain difficulties in keeping apart Nussbaum's Caland and non-Caland *-ro-* formations, as indeed he recognizes. The point may be illustrated with reference to his discussion of Sanskrit *abhrá-* n., Avestan *aβra-* '(thunder) cloud' (1976: 105–6). He observes that on the relevant root, Indo-European **neb^h-*, there are both Caland nominal formations (especially the *s*-stem attested e.g. in Greek *νέφος* 'cloud') and (non-Caland) verbal formations (e.g. *συν-νέφει* 'clouds over'). Having noted that Sanskrit *abhrá-* n. and Avestan *aβra-* '(thunder) cloud' look like reflexes of a substantivized *-ro-* adjective, fitting beside the *s*-stem as a further member of the Caland system, he concludes,

> But if there is a verbal root nebh- ''moisten'' from which is derived the root noun ''cloud'', it cannot be completely excluded that nbh-ro-is a deverbative -ro- noun (type *ξυρόν*/kṣurá- as above) and not a Caland -ro- adjective at all. This, as we have already seen, is a general problem with assuming substantivized -ro- adjectives from verbal roots. (Nussbaum 1976: 106)

Since not all roots are exclusively verbal or nominal, and since non-Caland forms can be made on roots that also have Caland systems, a degree of uncertainty must always be involved in the classification of a noun with *-ro-* as one of Nussbaum's original nouns in *-ro-* or as a substantivized Caland adjective. It remains true, however, that some words with a formant *-ro-* are only attested as nouns and exist beside verbal forms on the same root but not beside Caland systems. From a Greek point of view, purely substantival *-ro-* was not productive but may be the origin of some of the well-established *-ro-* nouns in the language.

Supposing that Nussbaum is right to regard nouns in *-ro-* such as *ξυρόν* 'razor' as fundamentally different in formation from original adjectives in *-ro-* such as *κῡδρός* 'glorious, renowned', we are left with two possibilities. Either there were two original *-ro-* suffixes, or there was one that was used in more than one way. For us, the crucial question is whether the accentual properties of the two kinds of formation are different, or at least whether any difference between them is reflected in Greek—whether the distinction between these two categories has any bearing on the distribution of accents among Greek words with *-ρο-* as we know them. This is not a straightforward question, given the difficulty of separating the members of the two categories of *-ro-* derivative, but we shall pay at least some attention to it in what follows.

Most old *-ro-* formations found in Indo-European languages reflect an original zero grade of the root (as in Greek ἐρυθρός 'red' from **H*$_1$*rud*^{h}*rós*). But some forms, such as Greek δηρός 'long, too long' reflect a full *e*-grade root (**du̯eH*$_2$-). Vine (2002) has recently studied these formations and suggests that at least some of them originated as old collective nouns formed with an accented *e*-grade root plus *-reH*$_2$. Such collectives should have given, in the first instance, Greek second-declension neuter plural nouns or first-declension feminine *-ᾱ/η-* stem nouns, and indeed in some cases there is direct evidence for such a noun beside an adjective or a masculine noun with *-ρο-*. Thus, the neuter plural μηῆρα 'thigh-pieces' differs in gender and accent from the singular μηρός 'thigh' and its plural μηροί; Vine (2002: 333) takes the synchronically anomalous μηῆρα as an archaism from which μηρός was secondarily back-formed.[6] In the case of Greek ἀγρός, Vedic *ájra-* m. 'field', reflecting **H*$_2$*eĝ-ros*, Vine (2002: 334) suggests that the root-accented feminine noun ἄγρᾱ 'the hunt; prey' continues an old collective referring to 'that which is driven', with the masculine noun ἀγρός, Vedic *ájra-* due to a secondary (although early) 'animatization'. Similarly, λεπρός 'scaly, rough' may be secondary to a collective continued by the feminine noun λέπρᾱ 'leprosy' (Vine 2002: 336). The adjective ἄκρος 'at the furthest point', reflecting **H*$_2$*eḱ-ros*, is likely to have originated as a noun (see Frisk 1938 and p. 263); Vine (2002: 335) suggests that the original form of this noun was that of an old collective continued by ἄκρᾱ 'highest or furthest point'. Without 'animatization', δῶρον 'gift', reflecting **deH*$_3$*-rom*, may be back-formed from an old collective that gave rise to the Greek neuter plural δῶρα (Vine 2002: 335). Further Greek forms with full *e*-grade root vocalism that Vine suggests may be due to old collectives are χῆρος 'bereaved, bereft', reflecting **ĝ*^{h}*eH*$_1$*-ros* (Vine 2002: 335–6),[7] νεκρός 'corpse' (Vine 2002: 339), and perhaps the adjective γαῦρος 'exulting in', which could reflect **geH*$_2$*u-ros* (Vine 2002: 339).

The following sections consider those derivatives which, historically, had a formant *-ro-* (whether 'Caland' or 'non-Caland') or a complex suffix of the form *-V-ro-*. Words in *-τρο-* and *-θρο-* are not considered since these suffixes are clearly different (at least in part) from simple *-ρο-* as regards their origin and semantics (cf. Chantraine 1933: 330–4, 372–5).

[6] The pre-form of μηῆρα is reconstructable as **mēms-reH*$_2$, so that in this case the root would appear to have a lengthened grade rather than an ordinary *e*-grade.

[7] I exclude χῆρος from the data that form the basis for the statistics given further on because it may well be a fairly late back-formation from the feminine χήρᾱ 'widow' (whatever the origins of χήρᾱ). See Frisk (1960–72: ii. 1095), and cf. Vine (2002: 336, also noting the relatively late appearance—not until Euripides—of adjectival χῆρος).

6.2 Comparative evidence

In Vedic, adjectives with the suffix *-ra-*, which generally derives from Indo-European **-ro-*, usually have final accentuation (Debrunner 1954: 852–3). The *-ra-* nouns are divided between final and root accentuation (Debrunner 1954: 856).[8]

For all except one of the word equations that can be made between Greek and Vedic or reconstructed proto-Germanic, final accentuation is found in at least one member of the equation. The only word equation for which both members are non-finally accented is that between *κάπρος* 'boar' and Old Norse *hafr* 'goat'.[9] The comparative evidence may be summarized as shown in Table 6(a). These word equations give more information on adjectives than on nouns, but the paucity of correspondences involving non-final accentuation for all members of the equation does not at any rate obviously suggest a well-developed class of root-accented nouns with suffix **-ro-*. The one equation for which all members attest root accentuation, that of *κάπρος* 'boar', concerns a word whose original internal structure is unclear but which has most recently been interpreted as originally a *-ro- adjective* rather than a noun (see Table 6(a) note e).

For the one clear equation for Nussbaum's 'non-Caland' *-ro-*, *ξυρόν/ξυρός* 'razor' : Skt *kṣurá-* m. 'razor', we find final accentuation in both members. Skt *abhrá-* n. 'thundercloud, cloud covering', for which Nussbaum suggested possible 'non-Caland' *-ro-* (see above), has final accentuation as does its possible exact correspondent *ἀφρός* 'foam'; the possible near-correspondent *ὄμβρος* 'rainstorm, thunderstorm' is recessive. So far, then, words with 'non-Caland' *-ro-* behave accentually like other *-ro-* derivatives.

One of the word equations in which only one member of the equation involves final accentuation, *ἀγρός* 'field' : Skt *ájra-* m. 'field', involves a form reflecting an *e*-grade root that Vine (2002: 334) suggests is due to an old root-accented collective (see p. 158 above). If so Sanskrit may preserve the more archaic accentuation here. On the other hand, a masculine noun can only have been back-formed from an old collective at a fairly remote period, and it is not entirely clear how one should expect such a back-formation to be accented: like the collective, or like other non-collective nouns that helped to motivate its creation? The difference in gender and in accentuation between Greek *μῆρα* 'thigh-pieces' and *μηρός* 'thigh' is very peculiar from a synchronic point of

[8] According to Debrunner, masculine nouns showing a direct connection to a verb (e.g. *kṣurá-* m. 'razor') are finally accented whereas other *-ra-* nouns follow no rule.

[9] Gk *ἤπειρος* 'mainland' (Aeolic *ἄπερρος*) originally had a suffix *-i̯o-* and so is irrelevant here, as well as not a true correspondence for OE *ōfer* 'harbour' and cognates (from PGmc **ōfera*); see Frisk (1960–72: i. 640).

Table 6(a). *Word equations between Greek and Sanskrit or Germanic words continuing an IE suffix* *-ro-

Greek	Outside Greek	Note on accents
i. *Certainly exact equations*		
ἀργός < **ἀργρός* 'shining, glistening; swift'	Skt *ṛjrá-* 'shining red, light-coloured; swift'[a]	Final accent in Gk and Skt
ξυρόν, τό (occasionally *ξυρός, ὁ*) 'razor'	Skt *kṣurá-* m. 'razor'[b]	Final accent in Gk and Skt
ἀγρός, ὁ 'field'	Skt *ájra-* m. 'field'[c]	Final accent in Gk, root accent in Skt
μακρός 'long'	ON *magr*, OE *mæġr*, OHG/MHG/NHG *mager* 'thin'[d]	Final accent in Gk and PGmc
ii. *Equations certainly exact, but internal structures of words unclear*		
κάπρος, ὁ 'boar'	ON *hafr* 'goat'[e]	Root accent in Gk and PGmc
ἑκυρός, ὁ 'father-in-law'	Skt *śváśura-* m. 'father-in-law' : OHG *swehur*, OE *swéor* 'father-in-law'[f]	Final accent in Gk, root accent in Skt and PGmc; Lith. may agree with Gk (see p. 230)
iii. *Possibly exact correspondences, but phonological developments less clear and/or connections not certain*		
κρυερός 'icy, cold, chilling'	Skt *krūrá-* 'bloody, raw'; n. 'blood-shed, cruelty'[g]	Final accent in Gk and Skt

[a] IE **H₂r̥ĝ-ró-* (see Mayrhofer 1986–2001: i. 253–4).

[b] IE **ksu-ró-* (see Mayrhofer 1986–2001: i. 435–6).

[c] IE form likely to be **H₂eĝ-ro-* (see Mayrhofer 1986–2001: i. 52).

[d] IE **maǩ-ró-s*, perhaps deriving ultimately from **mH₂ǩ-rós* (cf. Frisk 1960–72: ii. 164, but see also Nussbaum 1976: 103, arguing for an IE root **maǩ-* with fundamental *a*-vocalism and no laryngeal).

[e] IE **kápros*. The internal structure of the word is unclear, and I omit it from my main list of words with suffix *-ρο-*. Most recently, it has been interpreted as originally a *-ro-* adjective meaning 'voracious', built on the root of *κάπτω* 'gulp down' (see Briand 1997; Briand in Blanc, Lamberterie, and Perpillou 1999: 1406). The element *Haber-* of regional German *Habergeiß* 'snipe; kind of demon' implies a pre-form **kapró-*, but since it appears in a compound and could even be a derivative of our word rather than our word itself (so Kluge and Seebold 1995: 345 s.v.), I take simplex forms such as ON *hafr* 'he-goat' as of more value for the PGmc accent of the word.

[f] IE **su̯eǩuro-*. I do not include the word in my list of words with suffix *-ρο-* since the suffixation is unclear. The word may well contain the reflexive pronoun **su̯e* (see Frisk 1960–72: i. 479); an old compound cannot be ruled out.

[g] Skt *krūrá-* derives from **kruH₂-ró-*, which may also be the ultimate origin of the Gk form (Mayrhofer 1986–2001: i. 414). Frisk (1960–72: ii. 29) suggests that *κρυερός* may have been remade under the influence of adjectives in *-ερός*, if originally identical to Skt *krūrá-*.

Table 6(a). (*Cont'd*)

Greek	Outside Greek	Note on accents
μωρός (Attic μῶρος) 'dull, stupid'	Skt *mūrá-* 'dull, stupid, foolish'; m. 'fool'[h]	Final accent in Koine and Skt, recessive accent in Attic[i]
ὠχρός 'pale, wan'	Skt *(vy)āghrá-* m. 'tiger'[j]	Final accent in Gk and Skt
ἀφρός, ὁ 'foam'	Skt *abhrá-* n. 'thunder-cloud, cloud covering'[k]	Final accent in Gk and Skt
γαμβρός, ὁ 'brother-in-law, son-in-law'	Skt *jārá-* m. 'suitor, lover'[l]	Final accent in Gk and Skt
ἱερός 'filled with or manifesting divine power'	Skt *iṣirá-* 'fresh, flourishing, vigorous'[m]	Final accent in Gk and Skt
iv. *Approximate word equations (with some difference of vocalism or exact suffixation)*		
δηρός (Doric δᾱρός) 'long, too long'	Skt *dūrá-* 'distant'; n. 'distance'[n]	Final accent in Gk and Skt

[h] If the two terms are to be equated, the pre-form would be **muH₃-ró-* and a sound change **-uH₃-* > **-u̯ō-* would have to be assumed for Greek (Mayrhofer 1986–2001: ii. 367); cf. Normier (1977: 182 n. 26), with possible examples also of **iH₂* > Proto-Gk **i̯ā*, **uH₂* > Proto-Gk **u̯ā*, and **iH₃* > Proto-Gk **i̯ō*. I have not included μωρός/μῶρος in my main list of words with suffix *-ρο-* as the structure of the word is too uncertain.

[i] On Attic μῶρος see Ch. 12 n. 7, p. 263.

[j] This correspondence was first proposed by Persson (1912: 300 n. 4). For doubts, see Frisk (1960–72: ii. 1153–4). Persson's view has been revived by Dürbeck (1977: 116–19) and Bailey (1979: 26–7); cf. Mayrhofer (1986–2001: ii. 593). Bailey connects also various words for 'blue' such as Khotan Saka *āṣṣeiṇa*. Even if Persson's correspondence is accepted, the internal structure of ὠχρός remains uncertain. For example, it may be that ὠ- is a prefix but clear parallels are lacking (cf. Frisk 1960–72: ii. 1153–4). Given these doubts, I do not include ὠχρός in my main list of words with suffix *-ρο-*.

[k] Frisk (1960–72: i. 197) dissociates ἀφρός from Skt *abhrá-* n. on semantic grounds, but Mayrhofer (1986–2001: i. 94) is inclined to accept the connection. In view of the possibility that ἀφρός is connected to the Armenian reduplicated form *p'rp'owrk'* 'foam', in which case the *-ρ-* would belong to the root, I have not included ἀφρός in my main list of words with the suffix *-ρο-*.

[l] If γαμβρός and Skt *jārá-* m. are cognate, as traditionally assumed, the pre-form would be **ĝ̥mH₂-ro-* (see Nussbaum 1976: 59), but the connection is rejected by Mayrhofer (1953–80: i. 431; 1986–2001: i. 588).

[m] Gk dialects variously have ἱερός, ἰαρός, or ἴρός (Aeolic ἶρος); see García-Ramón (1992: 183). This multitude of variant forms has made the reconstruction of a single IE pre-form (e.g. **(H₁)isH₁ró-*) difficult. There is a vast literature on the question; see Mayrhofer (1986–2001: i. 199), with further bibliography.

[n] Skt *dūrá-* is from **duH₂-ró-*, δηρός from **du̯eH₂-ró-* (Nussbaum 1976: 13; Mayrhofer 1986–2001: i. 739; Vine 2002: 329 with n. 1). Vine (pp. 340–2) regards the two forms as having quite separate histories.

Table 6(a). (*Cont'd*)

Greek	Outside Greek	Note on accents
ἐρυθρός 'red'	Skt *rudhirá-* 'red, bloody'; n. 'blood'[o]	Final accent in Gk and Skt
λιπαρός 'oily, shiny with oil'	Skt *riprá-* n. 'dirt, impurity'[p]	Final accent in Gk and Skt
ἴθαρός 'cheerful; pure'	Skt *vīdhrá-* (= *vi-idhrá-*) n. 'clear sky, sunshine' (attested in Vedic only in the loc. sg. *vīdhré* 'with a clear sky'; in lexicographers also an adjectival use 'clean, clear, pure')[q]	Final accent in Gk and Skt
v. *Equation uncertain and, if correct, approximate*		
ὄμβρος, *ὁ* 'rainstorm, thunderstorm'	Skt *abhrá-* n. 'thunder-cloud, cloud covering'[r]	Recessive accent in Gk, final accent in Skt

[o] *ἐρυθρός* is from IE $*H_1rud^h$*-ró-*. Skt *rudhirá-* may be the result of contamination with the compositional form *rudh-i-* (Debrunner 1954: 361; Nussbaum 1976: 64 (but cf. Nussbaum 1976: 88); Mayrhofer 1986–2001: ii. 453–4, with further bibliography).

[p] See Frisk (1960–72: ii. 127). Nussbaum (1976: 107) argues for independent formations in Gk and Indic. Mayrhofer (1986–2001: ii. 460) mentions both forms as derived from the IE root **lip-* 'smear' but does not comment on the relationship between them.

[q] IE form likely to be $*(\underset{\cdot}{u}i\text{-})H_2id^h$*-ro-*: see Nussbaum (1976: 35–6); Peters (1980: 78–80, 109–10).

[r] Skt *abhrá-* n. from $*\underset{\circ}{n}b^hro$- or $*\underset{\circ}{n}b^hlo$-; *ὄμβρος* from $*onb^hro$- assimilated to $*omb^hro$-; see Mayrhofer (1986–2001: i. 94). Beekes (1969: 74) and Lubotsky (1988: 136) reject the equation on the grounds that $*\text{-}mb^h$- does not give Gk *-μβ-*, but see Schwyzer (1953: 333) and Frisk (1960–72: ii. 385).

view: in Greek as we know it the logical back-formation from *μῆρα* would have been *μῆρον*, retaining the gender and accentuation of the plural. It is therefore likely that a masculine noun with full-grade root and *-ro-*, even if back-formed from an old collective, was either accented on the *-ro-* already at a late stage of the parent language (when such back-formations perhaps occurred) and preserved as an archaism in Greek *μηρός*, or re-accented on the final syllable at a very early stage of Greek. Since, as we shall see, the majority of Greek nouns with *-ρο-* are recessive by the time we have direct evidence for their accentuation, there is no analogical motivation for the placement of an accent on the final syllable of a noun such as *μηρός* unless we can go back to a period so remote that the accentuation of Greek nouns with *-ρο-* was substantially different from the one directly attested. To anticipate the conclusions of Chapter 10, I think it likely that at a very early stage Greek nouns with

-ρο- were indeed finally accented much more frequently than they are once their accentuation is directly known, so that such an early Greek rearrangement is perhaps possible.

It is, in any case, striking that *all* the Greek masculine *-ρο-* nouns with *e*-grade vocalism that Vine argues may be due to old collectives have the accent on the final syllable: *μηρός* 'thigh', *ἀγρός* 'field', and *νεκρός* 'corpse'. The adjectives *δηρός* 'long, too long' and *λεπρός* 'scaly, rough' similarly have the accent on the final syllable. On the other hand, the adjectives *ἄκρος* 'at the furthest point' and *χῆρος* 'bereaved, bereft', and the neuter noun *δῶρον* 'gift', are recessive. These last three are perhaps all accented as one might expect if they were back-formed within Greek itself, *ἄκρος* from a feminine noun *ἄκρᾱ* 'highest or furthest point', *χῆρος* from *χήρᾱ* 'widow', and *δῶρον* from an old collective continued by the plural *δῶρα*. We shall return to *ἄκρος* and to a further adjective Vine mentions, *γαῦρος* 'exulting in', in Chapter 12 (pp. 263, 284–5). For now, I note merely that the Greek evidence does not support an old *general* pattern of root accentuation for forms with *e*-grade root; the contrast between *μηρός* 'thigh' and *μῆρα* 'thigh-pieces' suggests at least for masculine nouns of this type a pattern of final accentuation that must be very old within Greek if not already a feature of the parent language.

6.3 Descriptive accounts

Pape (1836: 169) and Chandler (1881: 88–9, 124–6) state that adjectives ending in *-ρος* usually have final accentuation whereas nouns with the same termination are mostly recessive. The generalization made for adjectives is more consistently valid than that for nouns, however, and it has been recognized that while adjectives ending in *-ρος* are usually accented on the final syllable the nouns are in fact split between final and recessive accentuation.[10]

Chandler (1881: 99–113) treats neuter nouns of the second declension, of whatever termination, separately from masculines and feminines. He gives a general rule that the neuters are mostly recessive when genuine nouns, but that their accentuation is less predictable when they are substantivized adjectives (pp. 99–100). The view that neuter nouns of the second declension are generally prone to recessive accentuation (similarly to neuter nouns of the third declension, which are all recessive) is also found in more recent discussions,[11] and we have just seen

[10] Frisk (1938, implicit); Chantraine (1933: 223–4); Lubotsky (1988: 135–6). Frisk does not make it clear whether he refers to words derived using the *suffix -ρο-* or to all words that end in *-ρος*. Chantraine and Lubotsky discuss specifically words derived using the suffix *-ρο-*.

[11] See, for example, Kuryłowicz (1935: 196); Kiparsky (1973: 797 n. 3); Lubotsky (1988: 125).

that the accentuation of the noun δῶρον 'gift' may indeed be connected to its neuter gender. We shall need to consider whether an association between recessive accentuation and neuter gender has any more general validity for words with the suffix -ρο-, or indeed for those with suffixes -το-, -νο-, and -λο- that will be the subjects of subsequent chapters.

Vendryes (1904: 173–4) considers nouns ending in -ρος together with neuters ending in -ρον, but without explicit regard to whether the element -ρο- was a suffix either historically or synchronically. He attempts to divide the nouns ending in -ρος or -ρον into groups with similar meaning and identical accentuation. Thus, the masculine kinship terms γαμβρός 'connection by marriage', ἑκυρός 'father-in-law', and πενθερός 'father-in-law' are finally accented as are the body parts μηρός 'thigh' and νεφρός 'kidney'. The so-called masculine plant names ἀχυρός 'chaff-heap', πῡρός 'wheat', φιτρός 'block of wood, log', and χονδρός 'granule; groats'[12] are also finally accented but the feminine plant names αἴγειρος 'black poplar', ἄκορος 'yellow flag, *Iris Pseudacorus*', κέδρος 'cedar-tree', κλῆθρος 'alder', and κόμαρος 'strawberry-tree' are recessive.

Not all of Vendryes's lists, of which I have quoted only a selection, are of equal value. The inclusion of words for chaff-heap, block of wood, and granule or groats in a supposed list of masculine plant names is strained. In addition, not all of the alleged feminine plant names can certainly be taken to be feminine. LSJ (s.v. ἄκορον) take the word for 'yellow flag' to be neuter and κλῆθρος 'alder' (s.v.) to be masculine. κόμαρος 'strawberry-tree' is attested with masculine as well as feminine gender (see LSJ s.v.).[13]

The list that deserves to be taken most seriously is that of masculine kinship terms. Vendryes argued in more detail in an article published in 1905–6 that several Greek masculine kinship terms are finally accented under the influence of other masculine kinship terms (Vendryes 1905–6*a*: 137–8). The word πατήρ 'father' would be a possible starting-point for analogical influence, since for this word we know from the Vedic and Germanic cognates that final accentuation is inherited. The final accent of ἑκυρός, by contrast, does not agree with the root accent of the Sanskrit and proto-Germanic cognates.[14] For πενθερός one might have expected

[12] LSJ list the noun χόνδρος with recessive accent, and the adjective χονδρός 'granular' with final accent. But according to Arc. (84. 14–16), the noun is χονδρός and the adjective χόνδρος. As Vendryes (1905–6*a*: 145) notices, the noun is accented on the first syllable in printed editions of Theophrastus (*CP* 4. 16. 2; *HP* 4. 4. 9, 4. 4. 10, 9. 4. 10).

[13] Vendryes (1905–6*a*: 144–5) argues in further detail for a general Greek tendency for feminine plant names to be recessive, masculine plant names finally accented, but as his presentation makes clear there are many exceptions and difficulties.

[14] See Table 6(a) ii above, but cf. p. 230 on the Lith. cognate.

(*?)*πενθέρος because of Wheeler's law.[15] I shall, however, come to some different conclusions about the accentuation of ἑκυρός, πενθερός, and γαμβρός in due course (pp. 229–30, 286).

6.4 Analysis of data

The data may be summarized as in Table 6(b).

Of the 243 words with a suffix -ρο- listed in Appendix 1, 194 are finally accented (80%), 40 are recessive (16%), and the accentuation of 9 (4%) is uncertain. As suggested above, however, a first division of these words into adjectives and nouns reveals that the accentual types are not evenly distributed. Of the 188 adjectives whose accentuation is known, 95% have final accentuation whereas only 33% of the 46 nouns with known accentuation are finally accented. Thus, adjectives with a -ρο- suffix are nearly all finally accented but a majority of the nouns is recessive. A sizeable minority of the nouns, however, has final accentuation like the adjectives.

We shall return later on to those adjectives in -ρο- with anomalous recessive accentuation (Ch. 12). For the moment, let us assume from the prevalence of final accentuation among the adjectives in -ρο- that final accentuation was normal for this category. The following analysis will be directed at explaining the accentuation of the nouns, leaving out of account the two nouns whose accentuation is uncertain (λεπῡρόν/λέπῡρον 'shell, husk' and ἀστυρόν/ἄστυρον, diminutive of ἄστυ

Table 6(b). *Adjectives and nouns with a suffix -ρο-*

	Adjectives	Nouns
Finally accented	179	15 (6 neuter, 9 non-neuter)
Recessive	9	31 (6 neuter, 25 non-neuter)
Accent uncertain	6	3[a]

Examples. Finally accented adjectives: αἰσχρός 'causing shame'; ἁδρός 'thick'; etc. Recessive adjectives: ἀήσυρος 'light as air'; γαῦρος 'exulting in'; etc. Finally accented nouns: ἀγρός 'field'; γαμβρός 'connection by marriage'; etc. Recessive nouns: ἄργυρος 'silver'; ἄλευρον 'wheat-meal'; etc.

[a] The figure of three here includes μηρός 'thigh', plural μηροί or μῆρα; the accent of these forms is certain but differs between the masculine and neuter forms. The neuter plural μῆρα is likely to preserve an old collective (see p. 158), and its accent is likely to be an extreme archaism.

[15] Other finally accented masculine kinship terms (not ending in -ρος) mentioned in this context include ἀδελφός 'brother', a word whose formation is not well understood. Note also the numerous counterexamples to Vendryes's hypothesis which he discusses (Vendryes 1905–6*a*: 140–3).

'town'), and the interesting noun *μηρός* 'thigh', pl. *μηροί*/*μῆρα*, whose accentuation does not fit into any large generalizations and has already been discussed separately (pp. 158, 159–63).

A superficial look at the figures quoted in Table 6(b) does not give the impression that neuter nouns are particularly likely to be recessive. The proportion of recessive nouns is in fact rather lower for the neuters than for the non-neuter nouns. The finally accented neuter nouns are *ἱερόν* 'offering; temple'; *νηρόν* 'water'[16]; *ξυρόν* 'razor'[17]; *πτερόν* 'wing'; *σταχυηρά* 'plants that bear ears, cereals'; *δυναμερά* 'potent drugs'. Most of these are likely to be substantivized adjectives in origin (as are many non-neuter nouns in *-ρο-*). For *ἱερόν* 'offering; temple' and *σταχυηρά* 'plants that bear ears, cereals' an adjectival origin is clear because the adjective is also attested; *σταχυηρά* may well have continued to be analysed synchronically as an adjective used substantivally (cf. p. 335 s.v. *σταχυηρά*). Nussbaum places *ξυρόν* 'razor' in the category of inherited *-ρο-* nouns, however (see p. 156 above), and his view that deverbative origin is characteristic of original nouns would probably make *πτερόν* 'wing' an original noun too. The most likely derivational base for *πτερόν* is the root of *πέτομαι* 'fly' in its verbal function. Whatever their origins, finally accented neuter nouns in *-ρο-* clearly do occur, and the presence of neuters in the list of nouns in *-ρο-* is certainly no explanation for the split accentuation of the nouns in *-ρο-* as a whole. In what follows I shall consider the neuter and non-neuter nouns together.

Following Lubotsky's hint (1988: 121; see p. 154), we shall consider whether a difference in the proportions of finally and recessively accented words with the suffix *-ρο-* can be observed between those *-ρο-* words attested in our earliest Greek literature, the Homeric poems, and those not attested until after Homer. The absence of a given word from Homer does not guarantee that the word is a post-Homeric creation, but if there is in fact a difference between the accentuation patterns of the oldest words in the language and those of younger words then one might expect the Homeric words to be somehow untypical of the corpus as a whole. If on investigation the Homeric words do turn out to be atypical in their accentuation, questions arise as to how this finding should be interpreted. But let us first investigate the facts.

The numbers of finally and recessively accented nouns with *-ρο-* in the Homeric and post-Homeric groups may be represented as shown in Table 6(c).

Of 19 Homeric nouns 9 have a final accent (47%), as compared with 6 out of 27 for the post-Homeric nouns (22%). A chi-squared test of

[16] Also masculine *νηρός*. [17] Rarely masculine *ξυρός*.

Table 6(c). *Nouns with -ρο-* (i) *attested in Homer, and* (ii) *not attested until after Homer*

	Homer	After Homer	TOTAL
Finally accented	9	6	15
Recessive	10	21	31
TOTAL	19	27	46

Examples. Homeric—Finally accented: *ἀγρός* 'field'; *ἀλῑτρός* 'sinner'; *γαμβρός* 'connection by marriage'; etc. Recessive: *ἄκρον* 'highest or furthest point'; *ἄργυρος* 'silver'; etc.

Post-Homeric—Finally accented: *δυναμερά* 'potent drugs'; *ἐλαιρός a liquid measure*; etc. Recessive: *ἄλευρον* 'wheat-meal'; *κύλινδρος* 'rolling stone; cylinder'; etc.

statistical significance shows that a discrepancy as great as this or greater would have a chance of about one in fourteen of occurring in a situation where the finally and recessively accented nouns were distributed randomly between the Homeric and post-Homeric groups.[18] This result could be due to chance, but it is sufficiently striking that it is worth asking whether there is an explanation other than chance.

The most obvious characteristic with which words attested in Homer should on average be more endowed than those first attested after Homer is antiquity. An easy conclusion from the foregoing analysis of nouns in *-ρο-* would therefore be that old nouns in *-ρο-* are more likely to be finally accented than newer ones. Before leaping to this conclusion, however, it is worth considering whether the observed discrepancy between the Homeric and post-Homeric words could be otherwise explained (assuming that it is not due to chance). The nouns with *-ρο-* attested in Homer might tend to share a characteristic other than age, as compared with those not attested in Homer. Specifically, words that were in very frequent use at all periods of ancient Greek are more likely to be attested in Homer than not. By omitting these, the group of words not attested in Homer is likely to omit several of the very commonest words, whereas the Homeric group will include these. Could it be that rather common words such as *ἀγρός* 'field' are particularly likely to be finally accented as well as particularly likely to be attested in Homer?

The possibility that it is not the age of the Homeric *-ρο-* words which leads to the difference in proportions noted above gains plausibility from consideration of the proportions of finally and recessively accented nouns with *-ρο-* when these are divided according to their occurrence or non-occurrence in another body of text, of a size comparable to that of the Homeric poems (in fact slightly shorter) but from the fifth century

[18] $X^2 = 3.2$; $p = 0.073$.

BC, Thucydides' *Histories*. We find a remarkably similar result to that obtained when the division is between Homeric and post-Homeric words, as the figures in Table 6(d) show.

Of the 11 Thucydidean nouns with *-ρο-*, 45% are finally accented, as compared with 29% of the 35 non-Thucydidean words.[19] The five finally accented nouns with *-ρο-* attested in Thucydides are *ἀγρός* 'field', *ἐχθρός* 'enemy', *ἱερόν* 'offering; temple', *νεκρός* 'corpse', and *σταυρός* 'pale, stake'. Four of these (all except *ἐχθρός*, which is attested in Homer only as an adjective meaning 'hostile') also occur in Homer and these account for almost half of the finally accented Homeric nouns.

At this point one might ask whether final accentuation in nouns with *-ρο-* could be correlated with their frequency of occurrence rather than their antiquity. In order to test this hypothesis, I have used the Perseus Digital Library corpus of ancient Greek literary texts, prepared by a team from Tufts University under the direction of G. Crane (searched in January 1999 and referred to as Crane 1999).[20] This corpus

TABLE 6(d). *Nouns with* *-ρο-* (i) *attested in Thucydides, and* (ii) *not attested in Thucydides*.

	Attested in Thucydides	Not in Thucydides	TOTAL
Finally accented	5	10	15
Recessive	6	25	31
TOTAL	11	35	46

[19] A chi-squared test of significance would be invalid in this case since one of the 'expected frequencies' is smaller than five.

[20] The following authors were represented (in many cases by a selection of their works rather than by all of them) at the time of consultation: Aeschines, Aeschylus, Andocides, Antiphon, Apollodorus, Aristophanes, Aristotle, Bacchylides, Demades, Demosthenes, Dinarchus, Diodorus Siculus, Euclid, Euripides, Herodotus, Hesiod, Homer, Homeric Hymns, Hyperides, Isaeus, Isocrates, Josephus, Lycurgus, Lysias, Pausanias, Pindar, Plato, Plutarch, Sophocles, Strabo, Thucydides, Ps.-Xenophon, and Xenophon. A drawback to my use of this particular corpus is the absence of some genres and authors, such as Hellenistic poetry, Polybius, or the Hippocratic Corpus, whose inclusion might have made some difference especially to the relative frequencies of words at the lower end of the frequency range. The main value of my searches, however, has been to divide the words investigated into highly frequent, highly infrequent, and neither highly frequent nor highly infrequent words; finer distinctions of frequency would make little or no difference to the results and I doubt that the gross category divisions would have been altered by the inclusion of more genres and authors. In addition, I learned too late that it would have been better if I had used one of the Perseus corpora on CD-Rom, since the Digital Library corpus available via the Perseus website was altered some time after

comprises texts selected from the literature of the period spanning Homer to the second century AD (the same period as that from which my data are drawn) and contained *c.*3,400,000 words at the time of consultation. The Perseus Digital Library has been designed with a facility for searching for the frequency of a lexical item, including all inflected forms. In all cases where a given lexical item could not be distinguished from another (or certain forms of a lexical item from certain forms of another) by the searching facility, as when an adjective such as ἐχθρός 'hated, hateful, hating' could not be distinguished from the noun ἐχθρός 'enemy', I have sorted the possible occurrences of the word in question myself.[21] Even so, it is often not easy to decide whether a word such as ἐχθρός is being used adjectivally or substantivally; in such cases I have followed my judgement about the use in a particular passage. Even if these difficulties are set aside, any hypothesis about the possible influence of word frequency on linguistic developments is necessarily based on a crude estimate of the relevant frequencies, especially where relevant developments may have occurred many centuries before the texts on which we can base estimates of word frequency. Nevertheless, from what has been said so far it would appear worth investigating, even in a necessarily rough and ready manner, whether there could be any relationship between the frequency of a noun with *-ρο-* and its accentuation.

The numbers of occurrences of nouns with *-ρο-* in the corpus may be laid out as shown in Table 6(e) (the exact number of occurrences of a word occurring at least once and under 500 times in the corpus is given in parentheses after the word).

I consulted it, making repetition of my searches impossible. However, the general validity of the divisions into highly frequent, highly infrequent, and neither highly frequent nor highly infrequent words may be replicated using any currently available version of the Perseus corpus and search engine.

[21] I inspected all possible instances of the required words in the corpus whether or not the searching facility reported an ambiguity. At the time I consulted the corpus, the summary statistics produced by the searching facility had two additional problems even where there were no cases of ambiguity. Firstly, the numbers of occurrences of words in Plato were incorrectly reported, and secondly, the summary statistics included figures for two works of Plutarch for which the electronic texts being used were not publicly available and for which the individual matches could not therefore be identified and checked. (They could of course have been identified and checked using a printed text and concordance, but there would have been little value in doing so because the point of the exercise was to get an idea about the relative frequencies of words based on some reasonably large corpus; there was no special reason, for my purposes, why these two works had to be included in the corpus.) In all cases I counted the occurrences of words in Plato myself (the searching facility was capable of finding them but not of counting them) and did not count the two works of Plutarch for which the results were not checkable via Perseus. My figures do not, therefore, correspond directly to the summary statistics produced by the Perseus searching facility even when there were no ambiguities between lexical items.

Table 6(e). *Frequencies of nouns with suffix -ρο- (per* c.*3,400,000 words)*

Occurrences in corpus	Finally accented words	Recessive words
0	5 words *δυναμερά* 'potent drugs' *θαλασσερός kind of eyesalve* *νηρόν* 'water' *σταχυηρά* 'plants that bear ears' *ἐλαιρός liquid measure*	9 words *κίσθαρος* 'rock-rose' *γίγγλαρος* 'kind of flute or fife' *κύλλαρος* 'hermit crab' *κύσσαρος* 'anus' *φάγρος* 'whetstone' *χάραδρος* 'mountain stream' *κύλινδρος* 'rolling stone; cylinder' *γῦρος* 'ring, circle' *λίγυρος precious stone*
1–100	5 words *γαμβρός* 'brother-in-law' (62) *πενθερός* 'father-in-law' (15) *ἁλῑτρός* 'sinner' (1) *σταυρός* 'stake, cross' (20) *ξυρόν* 'razor' (8)	16 words *τάλαρος* 'basket' (10) *χείμαρος* 'plug in a ship's bottom' (1) *κόμαρος* 'strawberry-tree' (1) *οἴναρον* 'vine-leaf' (1) *κύτταρος* 'hollow, cavity' (3) *φλύαρος* 'silly talk' (2) *ὄμβρος* 'rainstorm' (74) *μύδρος* 'red-hot mass' (13) *ἵππερος* 'horse-fever' (1) *λῆρος* 'trumpery; idle talk' (16) *βόθρος* 'hole, trench' (31) *ὄρθρος* 'time just before daybreak' (32) *ἄλευρον* 'wheat-meal' (8) *πίτῡρον* 'bran' (2) *λάφῡρα* 'spoils of war' (80) *ζέφυρος* 'westerly wind' (49)
101–200	1 word *πτερόν* 'wing' (123)	3 words *ἔταρος* 'companion' (176)[a] *ἄργυρος* 'silver' (116) *τάφρος* 'ditch, trench' (150)

[a] Examples of *ἔταρος* almost all Homeric. The more usual *ἑταῖρος* is formed with an additional suffix **-i̯o-*.

Table 6(e). (*Cont'd*)

Occurrences in corpus	Finally accented words	Recessive words
201–300	1 word *ἀγρός* 'field' (224)	1 word *ἄκρον* 'highest/furthest point' (209)
301–400	0 words	1 word *κλῆρος* 'lot' (396)
401–500	0 words	0 words
> 500	3 words *ἱερόν* 'offering; temple' *ἐχθρός* 'enemy' *νεκρός* 'corpse'	1 word *δῶρον* 'gift'

Chart 6(a) shows the absolute numbers of finally accented and recessive words in different portions of the frequency range, using the number of occurrences in the corpus as a frequency index and dividing this into intervals of 100. Zero (for words not occurring at all in the corpus) is used as a lowest frequency category and 'over 500' as a highest. Chart 6(b) presents the same data but the percentages of finally and recessively accented words in each frequency bracket are shown instead of the absolute numbers. An upper category of over 100, instead of over 500, occurrences has been used this time, because there are so few very high frequency data: the frequency brackets at the upper end of Chart 6(a) when converted into percentages would give, for example, a column showing 100% for the recessive words occuring 301–400 times, presenting a deceptive picture of massive recessivity here where there is only one word in the category. It is thus better to take more high frequency words together when showing percentages.

The situation is more complex than we might have suspected, but there is a clear pattern. Chart 6(b) shows that the percentage of words having final accentuation peaks at the two ends of the frequency range—very high frequency and very low frequency words have the greatest chances of being finally accented. The percentages of recessive words show a distribution that is (of course) the inverse of this one—the words that are most likely to be recessive are those in the frequency range 1–100,[22] and the percentages fall off on either side.

[22] Most of the recessive words in this frequency range in fact fall into the range 1–50, as can be seen from Table 6(e).

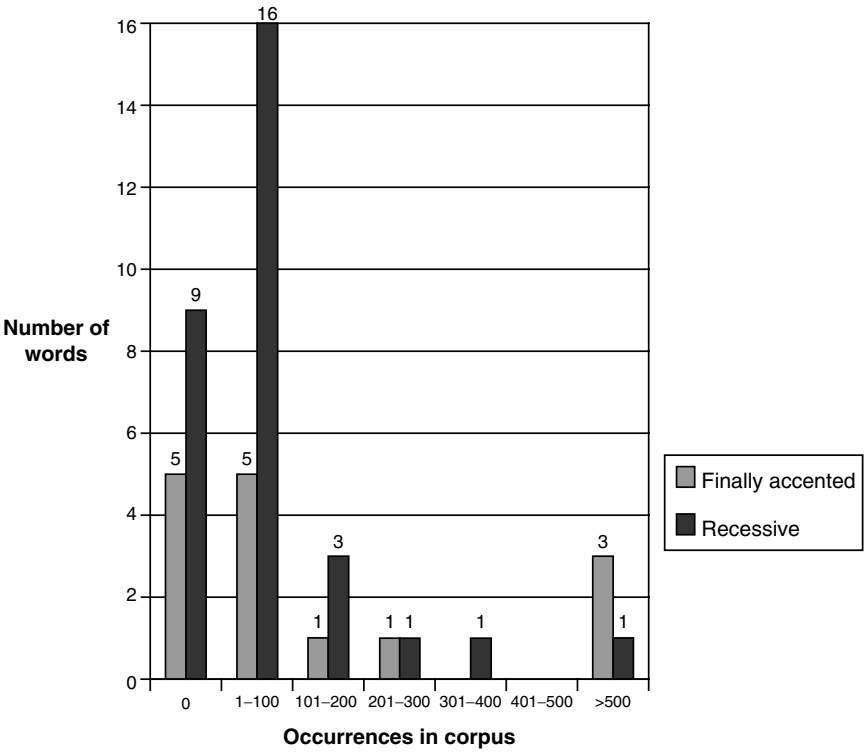

Chart 6(a). Nouns with suffix *-ρο-* (absolute numbers)

For the high frequency words, this conclusion is based on very few data. In addition, the three finally accented nouns with *-ρο-* whose frequencies are highest (*ἐχθρός* 'enemy', *ἱερόν* 'offering; temple', *νεκρός* 'corpse') all have corresponding adjectives attested (*ἐχθρός* 'hated, hateful, hating', *ἱερός* 'holy', *νεκρός* 'dead').[23] One might wonder whether the existence of a corresponding finally accented adjective is conducive to final accentuation in the noun. Could the apparent correlation between very high frequency and final accentuation be an accidental consequence of the particular nouns in *-ρο-* that happen to be very frequently attested? This hypothesis would seem rather plausible given only the nouns in *-ρο-* just discussed. However, we shall see that the result

[23] In the case of *νεκρός* the adjective is rare and is probably a Greek secondary creation from the noun (even if the noun may in turn have originated as an adjective); cf. Chantraine (1968–80: 741).

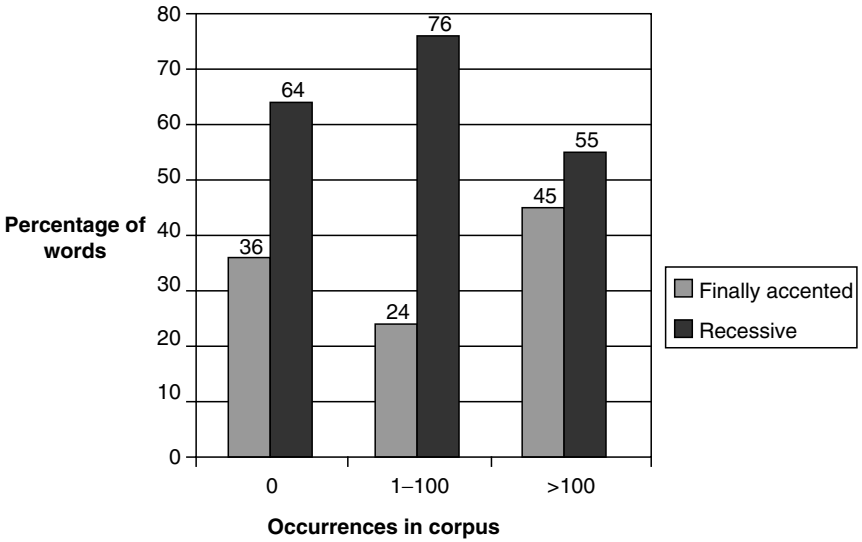

Chart 6(b). Nouns with suffix -*ρο-* (percentages)

obtained here for high frequency nouns with -*ρο-* gains strength from the fact that it is duplicated by nouns with the suffixes -*το-* and -*νο-*. It is to words with the suffix -*το-* that we now turn.

7 WORDS WITH SUFFIX -*το*-

7.1 Formation of adjectives

Greek inherited from Indo-European a category of adjectives in -*το*- (e.g. *κλυτός* 'renowned'). These are typically formed on verbal roots and usually have a passive or intransitive meaning, as in *γνωτός* 'perceived, understood, known' (passive) or *κλυτός* 'renowned' (intransitive). Active meaning is sometimes found, as in *τλητός* 'enduring', as is a potential meaning, also attested for *τλητός* in the sense 'endurable'.[1] The root is normally in the zero grade, although other vocalisms are also found (see Chantraine 1933: 304–5). Occasionally, adjectives in -*το*- are derived from nouns. Most examples are compounds, but Chantraine (1933: 305) regards non-compound *θαυματός* 'wonderful', for example, as derived from *θαῦμα* 'marvel'.[2] A class of adjectives in -*ωτός*, for which derivation from nouns is common, will be mentioned shortly.

Like -*ρο*-, -*το*- is sometimes found extended by various elements extracted from forms in which they originally belonged to the stem. Thus, *γνωστός* 'known' (existing beside *γνωτός*, but not attested as early) and *θαυμαστός* 'marvellous' have a non-etymological -*σ*- under the influence of forms such as *κεστός* < **κεντ-τός* 'stitched, embroidered', in which -*στ*- is the regular outcome of original *-*ntt*-, and under the influence of verbal forms with -*s*- such as *ἐγνώσθην* (see Chantraine 1933: 305). In some -*το*- adjectives, -*το*- is preceded by a vowel originating in some stem or stems of the associated verb. For example, the -*η*- of *ποιητός* 'made' or of *λωβητός* 'despitefully treated, outraged' evidently originated in forms of *ποιέω* 'make' and of *λωβάομαι* 'outrage, maltreat' such as the aorists *ἐποίησα*, *ἐλωβησάμην*, or futures *ποιήσω*, *λωβήσομαι*.

Adjectives in -*ωτός* are relatively numerous and frequently derived from nouns (cf. *χειριδωτός* 'sleeved', on the stem of *χειρίς*, gen. -*ίδος* 'sleeve'). It is possible that the -*ω*- originated in derivatives of verbs in -*όω*, various forms of which synchronically had a stem in -*ω*. Thus, Risch (1974: 21) regards *χολωτός* 'angry' as derived from *χολόω* 'anger'

[1] On the semantic possibilities, see Risch (1974: 19). On the origin of the potential meaning, see Risch (1974: 19); Chantraine (1933: 306–7); Vine (1998: 31–3). Opinions differ as to whether the possibility of active meaning is secondary (so Risch 1974: 19; Sihler 1995: 622) or a relic of original indifference as to voice (so Szemerényi 1996: 323; Chantraine 1933: 306–7).

[2] On this type, and the question of its antiquity, see Chantraine (1933: 305–6); Buck and Petersen (1945: 470); Risch (1974: 21 with n. 21).

(compare e.g. the aorist ἐχόλωσα). On the other hand, it has been argued that χολωτός is formed directly from χόλος 'anger' while χολόω is back-formed from χολωτός.[3]

A number of adjectives (as well as nouns, on which see below) appear to have a suffix -ετο- rather than simply -το-. Many of these are most closely associated with verbs (so ἑλετός 'that can be taken or caught'; cf. εἷλον, suppletive aorist to αἱρέω 'grasp'), but some are clearly derived from nouns (so αἰετός 'eagle', from *au̯i̯etos; compare Latin *auis* 'bird'). The deverbative formations in particular have recently been studied by Vine (1998), who traces their ultimate origins to a variant -*eto*-,[4] used particularly in negative compounds, of the verbal adjective suffix -*to*-. A typical continuation of the original type would be ἄσπετος 'unspeakable', from *$n̥$-sk$^{\mathrm{w}}$-*eto-s*, with zero-grade root and (negative) potential meaning. These forms were secondarily analysed as implying simplicia in -ετο-. At the same time, this -ετο- was reanalysed as consisting of the thematic vowel -*e*- plus -*to*-, on the basis of instances such as ἄσπετος that existed beside thematic aorists (compare especially the old aorist stem *sk$^{\mathrm{w}}$-*e*- preserved in ἐνισπεῖν, aorist infinitive of ἐν(ν)έπω 'tell'). New adjectives in -ε-το-, simplicia as well as compounds, were then created in association not only with thematic aorists but also with thematic presents. Hence for example κλειτός < *kleu̯-e-tós 'renowned, famous', and the compound δουρικλειτός 'famed for the spear', beside κλέω (from *κλέϝω) 'celebrate'. These forms built on the stems of thematic presents are characterized by the full-grade roots typical of straightforward thematic presents.

At least two sorts of denominative formations in -*eto*- have been recognized (see Vine 1998: 11–12). One of these (with 'augmentative' -*eto*-) forms nouns and will be mentioned shortly. In the other, -*eto*- forms adjectives on roots that also take various 'Caland' suffixes (see p. 155). The only clear Greek examples of this latter type are παχετός/πάχετος 'thick, massive' (cf. παχύς 'thick, stout', πάχος, τό 'thickness'), and περιμήκετος 'very tall or high' (cf. μακρός 'long', μῆκος, τό 'length').[5]

Compounds in -ετο- do not figure in the ensuing discussion, since I systematically exclude compounds from consideration. The deverbative simplicia are included on the grounds that, whatever the ultimate origins of their -*eto*-, the frequent association of Greek adjectives in -ετο- with thematic verbal forms suggests at least a synchronic segmentation as -*e*- + -*to*-. Following Vine, I take deverbative -*eto*- to be

[3] On the mechanism for this last stage see Tucker (1981: 18).

[4] On the original structure of this *-*eto*- (in fact *-*etó*- , but I postpone discussion of the accent for the time being), see Vine (1998: 43 n. 99).

[5] See Peters (1980: 179 n. 131); Vine (1998: 12); cf. Solta (1963, esp. 168–9, 173).

linked in its origins to the verbal adjective suffix *-to-* and synchronically bound up with *-to-* in Greek. The denominative type of *παχετός/πάχετος* 'thick, massive' and *περιμήκετος* 'very tall or high' does not figure largely in the following discussion; *περιμήκετος* is systematically excluded as a prefixed form, while the uncertain accent of *παχετός/πάχετος* makes it unhelpful for our purposes. In principle, however, I tentatively include this type of adjective in *-eto-* as synchronically associated with all the other forms in *-eto-* and in *-to-* and therefore, again in principle, worthy of consideration here.

7.2 Formation of nouns

Nouns in *-το-* also exist. Some are substantivized adjectives, as is particularly clear when a word is attested as both noun and adjective (*γνωτός* 'kinsman' beside *γνωτός* 'perceived, understood, known'[6]) or when it has exact cognates functioning as adjectives (*στρατός* 'army' beside Skt *stṛ̥ta-* 'bestrewn; overthrown'). In other instances, a semantic development from adjective to noun can easily be reconstructed, as in the case of *ἑρπετόν* 'creeping thing' → 'reptile'.[7] The nouns in *-το-* that, taking only these considerations into account for the time being, one might classify as substantivized adjectives are the following (the associated verbs are given in parentheses):

στρατός 'army, host' (*στόρνῡμι* 'spread')
ἑρπετόν 'creeping thing, reptile' (also late[8] adj.; *ἕρπω* 'move on the ground')
θνητός 'mortal' (also adj.; *θνῄσκω* 'die')
σπορητός/σπόρητος 'sown corn, growing corn' (*σπείρω* 'sow')
ποτητά 'birds' (*ποτάομαι* 'fly hither and thither')
ἑψητός small fish boiled for eating (also adj.; *ἕψω* 'boil', aor. *ἥψησα*)
σπαρακτόν 'rubble' (*σπαράσσω* 'tear, rend')
ἄτρακτος 'spindle' (a derivative of the lost primary verb to which Lat. *torqueō* 'turn' is an intensive)
πόκτος 'fleece' (*πέκω* 'shear')
φρῡκτός 'firebrand, torch' (also adj.; *φρῡ́γω* 'roast')
βοτόν 'farm animal' (*βόσκω* 'feed, tend')
ἀροτός/ἄροτος 'cornfield' (also finally accented adj.; *ἀρόω* 'plough, till')
βροτός 'mortal man/woman' (also adj.; Lat. *morior* 'die')
σκηπτός 'thunderbolt' (*σκήπτω* < **σκᾱ́π-ι̯ω* 'let fall, hurl upon')

[6] But see p. 350 s.v. *γνωτός* 'kinsman'.

[7] See Vine (1998: 9 with n. 3), with a defence of the early attestation of adjectival *ἑρπετά* at Alcman 89. 3 Davies. For the semantic development involved in the substantivization cf. Latin *serpens* 'snake', originally a participle of *serpō* 'creep'.

[8] But see n. 7 above.

ἑρπτόν 'creeping thing; reptile' (ἕρπω 'move on the ground')
δαρτά *fish that must be skinned before dressing* (also adj.; δέρω 'skin, flay')
σπαρτός/σπάρτος/σπαρτόν/σπάρτον 'Spanish broom (a plant)' (lost verb also underlying σπάρξαι (aor. inf.) 'swathe').
σπαρτόν/σπάρτον 'rope' (same lost verb as for σπαρτός 'Spanish broom')
φόρτος 'load' (φέρω 'bear')
χόρτος 'enclosed place, farmyard' (Skt *hárati* 'bring')
ναστός 'well-kneaded cake' (also adj.; νάσσω 'press')
παστός 'bridal canopy or curtain' (also adj.; πάσσω 'sprinkle')
σηστός 'sifter (a nickname)' (σήθω 'sift')
βρῡτός/βρῦτος and βρῡτόν/βρῦτον 'fermented liquor made from barley, beer' (Lat. *feruēō* 'boil, ferment')
φορυτός 'whatever the wind carries along, rubbish' (φορῡ́νομαι 'become mixed, become stained')
φυτόν 'plant' (also adj.; φύω 'bring forth, produce')
μισθωτός 'hireling, hired servant' (also adj.; μισθόω 'let out for hire')
γνωτός 'kinsman' (also adj.; γιγνώσκω 'come to know, perceive')

As in the case of words with -το- that function synchronically as adjectives, some of the words listed here are formed on the zero grade of the verbal root (e.g. δαρτά *fish that must be skinned before dressing*), while others are formed by simply adding -το- to a synchronic stem of the verb (thus ποτητά 'birds'; compare the aorist ἐποτήθην or perfect πεπότημαι). In σπορητός/σπόρητος 'sown corn, growing corn', we find both an *o*-grade of the verbal root and probably an extension of the termination -ητο- from the type of ποτητά 'birds'. In the case of ἑρπετόν 'creeping thing, reptile', the suffix has the form -ετο-.[9] There are also some forms with *o*-grade of the verbal root: πόκτος 'fleece' (poorly attested); φόρτος 'load'; χόρτος 'enclosed place, farmyard'.

Other nouns with -το- are deverbative abstracts (*nomina actionis*). Those that seem to be identifiable on the basis of their meaning and the existence of suitable related verb forms are the following (the associated verbs are again given in parentheses):

κάματος 'toil' (κάμνω 'work, toil')
θάνατος 'death' (θνῄσκω 'die')
πνῑγετός 'choking, stifling' (πνί́γω 'choke')
ἀλετός/ἄλετος 'grinding' (ἀλέω 'grind')

[9] The adjective ἑρπετός 'moving, creeping' (whether genuinely attested at an early date or not; cf. n. 7 above) lying behind ἑρπετόν belongs to the type of deverbative adjective in *-e-to-* built beside a thematic present (ἕρπω 'move on the ground, walk'): see Vine (1998: 16) and p. 175 above. On its rather unusual semantics for this type, see Vine (1998: 21–2).

ἔμετος 'vomiting' (ἐμέω 'vomit')
κοπετός 'noise (esp. lamentation)' (κόπτω 'cut, strike')
τυπετός 'beating the breast, mourning' (τύπτω 'beat')
τρυγητός/τρύγητος 'gathering of fruits, vintage, harvest' (τρυγάω 'gather in the fruit or crop')
ἄμητός/ἄμητος 'reaping, harvesting' (ἄμάω 'reap corn, cut')
λικμητός 'winnowing' (λικμάω 'winnow')
ἀλοητός/ἀλόητος 'threshing' (ἀλοάω 'thresh')
μασητά 'chewings (of food)' (μασάομαι 'chew')
θυητά 'fumigations' (θύω 'offer burnt sacrifice')
σκαφητός 'hoeing, digging' (σκάπτω 'dig')
κοῖτος 'sleep, going to rest' (κεῖμαι 'lie')
βίοτος 'life, means of living' (βιόω 'live')
πότος 'drinking bout' (πίνω 'drink', perf. πέπωκα)
νόστος 'return home' (νέομαι 'go, come')
κωκῡτός 'shrieking' (κωκύω 'shriek')

Some of these, such as κωκῡτός 'shrieking' or ἄμητός/ἄμητος 'reaping, harvesting', are clearly formed by adding -το- to a synchronic stem of the verb (cf. present κωκύω, future ἀμήσω). πότος 'drinking bout', on the other hand, has -το- added to the zero grade of the root *pH_3. In some words (especially πνῑγετός 'choking, stifling', κοπετός 'noise (esp. lamentation)', τυπετός 'beating the breast, mourning') the suffix has the form -ετο-.[10] Yet others are formed by adding -το- directly to an *o*-grade of the verbal root: κοῖτος 'sleep, going to rest', νόστος 'return home'. Finally, κάματος 'toil' and θάνατος 'death' are formed on the laryngeal-final roots *$\hat{k}\underset{\circ}{m}H_2$-, *$d^h\underset{\circ}{n}H_2$- with what has often been taken to be a disyllabic reflex of the zero grade, but their formation is much disputed.

The type of verbal abstract with *o*-grade root is probably inherited, although it is difficult to point to exact correspondences. Deverbative *-eto-* also appears to be inherited, but its use was extended in various directions in Greek and it is disputed whether the formation of verbal abstracts was among its original functions.[11] The type of κωκῡτός 'shrieking', in which -το- is simply added to a synchronic stem of the verb, is

[10] In two cases, ἀλετός/ἄλετος 'grinding' (ἀλέ-ω 'grind') and ἔμετος 'vomiting' (ἐμέ-ω 'vomit'), the -ε- is at hand in the synchronic present stem of the verb; but various different interpretations of these forms are possible: see Vine (1998: 14).

[11] See Waanders (1974: 4, concluding that there was 'an IE suffix *-*eto*-/-*ete*$_2$- alongside of *-*to*-/-*te*$_2$-, primarily deriving (action?) nouns from zero-grade roots'); Ruijgh (1992: 80–1 n. 17, taking νιφετός to be a *nomen actionis*; 1980: 195 n. 33; 1988: 452; 1997: 272, assuming, with Waanders, that the structure of the abstract nouns κάματος 'toil' and θάνατος 'death' is to be elucidated by comparison with νιφετός 'falling snow, snowstorm'); Vine (1998: 11–12, arguing that νιφετός and similar formations are denominative, not deverbative).

likely to be a secondary development. We shall return to the problem of the formation of *κάματος* 'toil' and *θάνατος* 'death' (pp. 187, 233–6).

I have listed forms at length to show that the variety of formations is very similar for the words that appear on semantic grounds to be substantivized adjectives and for those that appear to be verbal abstracts, although certain formations may be preferred by one type or the other. For example, the type with *-το-* added to the zero grade of the verbal root is preferred by the likely substantivized adjectives. But no clear-cut division between the various formations can be made on any semantic basis. The difficulty of distinguishing neatly between the two types is highlighted by the noun *σπορητός/σπόρητος*, listed above as a substantivized adjective ('sown corn, growing corn') but also attested as a verbal abstract ('sowing of corn').

It is sometimes assumed that the forms with *o*-grade of the verbal root are all originally verbal abstracts. Thus, Risch (1974: 25) classifies both *φόρτος* 'load' and *χόρτος* 'enclosed place, farmyard' as abstracts. This classification is semantically difficult,[12] and yet it is noteworthy that the formational type of *φόρτος* 'load' (*o*-grade verbal root plus *-το-*) is found only among nouns with *-το-*, not among the adjectives. Although not all words of type *φόρτος* fit a semantic classification as verbal abstracts, the absence of this type of formation from the adjectives suggests that the the category as a whole was substantival from the beginning. The words *θάνατος* 'death' and *κάματος* 'toil', formed with what I shall refer to (but without prejudice as to their ultimate analysis) as a disyllabic or CVRV reflex of a laryngeal-final root plus *-το-*, have been variously analysed in terms of otherwise attested formations (see pp. 233–6). For the moment, I shall treat these two words as belonging to a special type of which they are the only examples. We may note provisionally that the small number of instances of this 'type' makes it conceivable that the absence of adjectival examples here is due merely to chance. But if it is not, the type of *θάνατος* and *κάματος* was also originally substantival, as indeed it is (in one way or another) usually taken to be.

The remaining nouns with *-το-* are either apparently derived from nominal bases (so *κοντωτόν* 'punt'; cf. *κοντός* 'pole') or cannot easily be categorized as either substantivized adjectives or verbal abstracts. Risch (1974: 25) classifies *πλοῦτος* 'wealth' (to *πλέω* < **πλέϝω* 'flow') as an abstract presumably because of the *o*-grade root, although the meaning of the form would be compatible with either an original meaning 'action of flowing' or with adjectival 'flowing'. Similar problems arise for *οἶτος* 'fate, doom', probably formed on the root of *εἶμι* 'I shall go': was the original meaning substantival ('going' sc. of the world) or adjectival

[12] Despite Risch's translation of *χόρτος* as 'Umzäunung'.

('which goes')? Should one decide on the basis of the *o*-grade root? (See also Table 7(a) note h.)

Several nouns in *-ετο-* are either fairly clearly formed on nominal bases or difficult to categorize. An 'augmentative' suffix *-eto-* has been recognized in ἀ̓ετός or αἰετός 'eagle' (from **au̯i̯etos*[13]), thought to mean originally 'large bird' and derived from the word for 'bird' preserved in Latin *auis*.[14] Further nouns in *-ετο-* that have been taken as augmentatives include πυρετός 'burning heat; fever' (cf. πῦρ, gen. πυρός 'fire') and νιφετός 'falling snow, snowstorm' (cf. νίφα (acc.) 'snow'), with ὗετός 'rain, heavy shower' and βροχετός 'wetting, rain' modelled on νιφετός.[15] But νιφετός and ὗετός have also been taken as verbal abstracts, the first built via an old pattern on the zero-grade form of the root of νείφει 'it snows' and the second from the unaltered stem of ὕ̄ει 'it rains' (so Waanders 1974: 3–4). In the case of (σ)κάπετος 'ditch, trench' (to σκάπτω 'dig') there is no question of a nominal base, but Risch classifies (σ)κάπετος as an abstract (perhaps because of its recessive accent; see pp. 183–4) while Vine (1998: 41), who does not accept the existence of an old class of deverbative abstracts in *-eto-*, classifies it as a substantivized adjective. The meaning would be compatible either with an origin as a verbal abstract, 'action of digging' (with a semantic development to the result of the verbal action) or with an original adjective with passive meaning, 'dug' → 'dug thing' → 'ditch, trench'.[16] Similar problems arise for σταγετός 'drop' (to στάζω 'drop').

To summarize, nouns in *-το-* appear to have at least three origins: substantivization of adjectives in *-το-* (and *-ετο-*), original verbal abstracts in *-το-* (and perhaps *-ετο-*), and augmentatives in *-ετο-*. It is very difficult to distinguish between these three categories on a semantic basis. In principle the most easily distinguishable type should be that of the augmentatives, identifiable on the basis of a coincidence between augmentative meaning, a suffix *-ετο-*, and the existence of an appropriate nominal base. But in practice there is very little agreement as to which nouns (other than αἰετός 'eagle') should be classified as augmentatives, and some of the possible augmentatives (e.g. ὗετός 'rain, heavy shower') could well have been formed by analogy with other possible augmentatives (νιφετός 'falling snow, snowstorm') even without a direct link to a nominal base.

[13] For a reconstruction in terms of laryngeals, and phonological discussion, see Peters (1980: 12, 216–17 n. 168).

[14] See Schulze (1908: 343 n. 5); Schwyzer (1953: 501); Solta (1963: 171); Schindler (1969: 147); Vine (1998: 11–12).

[15] So Vine (1998: 11–12, 70 with n. 170); cf. Schwyzer (1953: 501).

[16] Cf. the NE word 'dug-out', meaning a canoe dug out of a tree trunk (and various other objects formed by digging out).

7.3 Data included and excluded

The words considered in the following sections include those with extended *-το-* suffixes such as *-στο-*, *-ητο-*, and *-ωτο-*, and all the simplex types in *-ετο-*, but not words with an ordinal or superlative suffix *-(α)το-* (e.g. *δέκατος* 'tenth', *ὕστατος* 'last').[17] Verbal abstracts, substantivized adjectives, and denominative forms are all included. Although we shall keep in mind that the distinctions between these various groups may well be of relevance for their accentuation, the preceding discussion has suggested that we cannot begin by drawing any very clear dividing lines between them. Rather, we shall try to identify distinctions that appear to affect the accentuation of our words in synchronic terms, and use these as a starting-point for some historical deductions.

7.4 Comparative evidence

Sanskrit deverbative adjectives in *-ta-*, corresponding to Greek *-το-*, are finally accented in Vedic (Debrunner 1954: 558). Debrunner counts most Sanskrit nouns with *-ta-* as substantivized adjectives (pp. 584–7), and these are finally accented. A few nouns built on a full-grade root are compared in formation with *νόστος* 'return home' and *φόρτος* 'load' (pp. 587–8). One, *márta-* m. 'mortal, man', is attested with an accent.[18] Non-deverbative nouns and adjectives with *-ta-* are variously accented (pp. 588–92).

The relevant word equations are shown in Table 7(a).[19] All certainly exact correspondences are between Greek adjectives with *-το-* and Vedic adjectives with *-ta-* (including 'streaming, flowing', first attested as a substantivized neuter), and all show final accentuation in both Greek and Vedic. For *κλυτός* 'renowned' Germanic adds a third term, though with a long *-ū-* in the root; this form likewise reflects final accentuation (see Table 7(a)iii).

For the nouns we have no equations of the same quality. All correspondences except for one are with Germanic and all are less than certain or less than perfect. The one correspondence with Sanskrit, if valid, is between *βρότος* 'blood that has run from a wound, gore' and the Sanskrit adjective *mūrtá-* 'run, congealed'; the Greek and Sanskrit forms differ in accentuation. One of the uncertain word equations between Greek

[17] On these see Chantraine (1933: 307–8).

[18] On the formation cf. Mayrhofer (1986–2001: ii. 327). Debrunner mentions also *vā́ta-* m. 'wind', but this word is not of comparable formation to Gk *νόστος* etc.; see Mayrhofer (1986–2001: ii. 542).

[19] I ignore the word equation that has sometimes been assumed between *δέλτος* 'writing-tablet' and Gmc forms such as ON *tjald* 'tent': see Ch. 5 n. 24.

Table 7(a). *Word equations between Greek and Sanskrit or Germanic words continuing an IE suffix* *-to-

Greek	Outside Greek	Note on accents
i. *Certainly exact equations*		
βροτός 'mortal'; βροτός, ὁ/ἡ 'mortal man(/woman)'	Skt *mr̥tá-* 'dead'[a]	Final accent in Gk and Skt
βατός 'passable, accessible'	Skt *gatá-* 'gone'[b]	Final accent in Gk and Skt
τατός 'that can be stretched'	Skt *tatá-* 'extended'[c]	Final accent in Gk and Skt
φατός 'slain, dead'	Skt *hatá-* 'struck, killed'[d]	Final accent in Gk and Skt
θετός 'placed'	Skt *hitá-* 'placed'[e]	Final accent in Gk and Skt
κλυτός 'renowned'	Skt *śrutá-* 'heard, famous'[f]	Final accent in Gk and Skt
ῥυτός 'flowing, fluid'	Skt *srutá-* n. 'flow'; post-Vedic also adj. 'streaming, flowing'	Final accent in Gk and Skt
γνωτός 'perceived, known'; ὁ γνωτός 'kinsman'	Skt *jñātá-* 'known, understood'[g]	Final accent in Gk and Skt
ii. *Possibly exact equations*		
οἶτος, ὁ 'fate, doom'	Goth. *aiþs*, OE *āð*, NE *oath*, OHG *eid*, MHG *eit* (oblique stem *eid-*), NHG *Eid* 'oath'[h]	Root accent in Gk and PGmc
χόρτος, ὁ 'enclosed place, farmyard'	Goth. *gards* 'house, homestead', OS *gard*, OE *ġeard*, NE *yard*, OHG *gart* 'enclosure, yard, garden'[i]	Recessive accent in Gk, final accent in PGmc (but see note i)

[a] IE **mr̥tós*.
[b] IE **gʷm̥tós*.
[c] IE **tn̥tós*.
[d] IE **gʷhn̥tós*. The simplex *φατός* is attested only in Hesychius (*φ* 229–31 Schmidt), so one cannot be confident about its accentuation: see p. 4.
[e] IE **dʰH₁tós*.
[f] IE **ḱlutós* .
[g] See e.g. Mayrhofer (1953–80: i. 446).
[h] If cognate, the Gk and Gmc forms would derive from IE **H₁oitos* and could be built on the *o*-grade of the root of εἶμι 'I shall go'. On the semantics, see Frisk (1960–72: ii. 371) and Lloyd, Lühr, and Springer (1998: 977–8). On the possibility that the word was borrowed into Gmc from Celtic, see Lloyd, Lühr, and Springer (1998: 977).
[i] The Gmc forms could be from **gʰorto-* (like the Gk form) or **gʰordʰo-*. If the latter, Gmc provides no evidence for the accent (cf. Table 5(a) note w).

Table 7(a). (*Cont'd*)

Greek	Outside Greek	Note on accents
βρότος, ὁ 'blood that has run from a wound, gore'	Skt *mūrtá-* 'run, congealed'[j]	Recessive accent in Gk, final accent in Skt
iii. *Approximate equations*		
βρῡτός/βρῦτος, ὁ, βρῡτόν/βρῦτον, τό 'beer'	OE *broð*, NE *broth*, OHG *brod* 'broth'[k]	Uncertain accent in Gk, root accent in PGmc
κλυτός 'renowned'	OS/OE/OFri *hlūd*, NE *loud*, OHG (*h*)*lūt*, *chlūd* 'loud'[l]	Final accent in Gk and PGmc

[j] If Skt *mūrtá-* is cognate with βρότος, the Skt form derives from an IE form **mr̥Htó-*, the Gk form (which would have Aeolic vocalism) from a **mr̥tó-*, without laryngeal (Mayrhofer 1986–2001: ii. 368; cf. Beekes 1969: 243). Leumann (1950: 124–7) proposes instead that βρότος is a back-formation from ἄμβροτος 'immortal', reinterpreted as 'bloodless'; doubted by Chantraine (1968–80: 198).

[k] The pre-form for Gk (which is likely to have borrowed the word from Thracian) is **b*^{h}*rūto-* (**b*^{h}*ruHto-*), the pre-form for Gmc **b*^{h}*ruto-* (see Frisk 1960–72: i. 273; Lloyd, Lühr, and Springer 1998: 354).

[l] The pre-form for Gk is **k̂lutós*, the pre-form for Gmc **k̂lūtós* (see Frisk 1960–72: i. 878).

nouns and Germanic forms would attest root accentuation in both Greek and Germanic for a noun with an *o*-grade root (Greek οἶτος 'fate, doom'); another uncertain equation would attest a difference of accentuation between Greek and Germanic (Greek χόρτος 'enclosed place, farmyard'). The word for 'beer' (Greek βρῡτός/βρῦτος) has uncertain accentuation in Greek, where it is likely to be a borrowing from Thracian, and root accentuation in Germanic.

The comparative evidence for final accentuation in *-to-* adjectives is thus very good. For the nouns the evidence is very uncertain and does not allow any real conclusions.

7.5 Descriptive accounts

The pervasive final accentuation of adjectives in -το- has often been pointed out (see e.g. Chandler 1881: 127; Vendryes 1904: 175; Postgate 1924: 49; Bally 1945: 104–5). Nouns in -το- clearly vary in their accentuation, but there are various different formulations of how they vary.

For Lubotsky (1988: 136–7), whose method of reconstruction relies entirely on synchronic irregularities, words with suffix -το- are of no interest because their accentuation is entirely predictable:

The accentual distribution of this suffix is the following: the verbal adjectives with zero grade in the root are oxytone (*ποτός*, *στατός*, *γνωτός*, etc.), while the nomina actionis with *o*-grade in the root are barytone (*νόστος*, *φόρτος*, etc.). The substantivized adjectives preserve the oxytonesis, cf. *βροτός* 'mortal man', *στρατός* 'army', etc. The same holds true for the neuters, cf. *ποτόν*, *φυτόν*, etc.

Accordingly, the words with this suffix cannot be used.

Vendryes (1904: 174–5) makes a more general statement, with some qualifications, regarding the accentuation of *-το-* abstracts: nouns ending in *-τος* that denote an action or result are generally recessive, except that some in *-ετος* are finally accented. His examples of the latter type are *βροχετός* 'wetting, rain'; *νιφετός* 'falling snow, snowstorm'; *πυρετός* 'burning heat, fever'; *τοκετός* 'childbirth, delivery'; and *συρφετός* 'sweepings, refuse'.[20] Bally's (1945: 62) formulation is even more qualified than Vendryes's. He states that *nomina actionis* in *-το-* are recessive if they have an *o*-grade root; for those that do not have an *o*-grade root the accent is variable.

We have already seen (§ 7.2 above) that the ablaut grade of the root in nouns with *-το-* does not correlate with semantic category to quite the extent that is commonly assumed. Nor is there a neat correlation between the presence of *-ετο-* and semantic category—although forms with *-ετο-* and possible nominal bases are often at least capable of an augmentative interpretation. But we have not so far considered whether there is a relationship between accentuation and root ablaut grade for nouns with *-το-*, nor whether the suffix *-ετο-*, or any recognizable group of words with *-ετο-*, is associated with a particular accentuation pattern. Lubotsky's mention of neuters in the statement quoted above may also serve as a reminder that the possibility of an accentual difference between neuter and non-neuter nouns should be borne in mind.

7.6 Analysis of data

The overall distribution of final and recessive accentuation in nouns and adjectives with *-το-* is as shown in Table 7(b).

As in the case of *-ρο-*, but to a still greater extent, words with suffix *-το-* are predominantly adjectives. Apart from three words whose accentuation is unclear, the adjectives with *-το-* are finally accented

[20] The first three of these have been classified as augmentatives or as modelled on augmentatives (see p. 180). *τοκετός* is likely to be a denominative of some sort based on *τόκος* 'childbirth' (so Schwyzer 1953: 501; Vine 1998: 14), and *συρφετός* a denominative beside *σύρφος· θηρίδιον μικρόν, ὁποῖον ἐμπίς* ('a small creature, like a gnat'; Hesychius *σ* 2795 Schmidt); *σύρφαξ* 'rabble'; *σύρφη· φρύγανα* ('dry sticks, firewood'; Hesychius *σ* 2794 Schmidt): see Richter (1909: 20); Schwyzer (1953: 501); Solta (1963: 170); Vine (1998: 14).

Table 7(b). *Adjectives and nouns with a suffix -το-*

	Adjectives	Nouns
Finally accented	546	46 (12[a] neuters, 0 *o*-grade root + -το-)
Recessive	0	21 (4 neuters, 7 *o*-grade root + -το-)
Accent uncertain	3	12 (5[b] neuters, 0 *o*-grade root + -το-)
TOTAL	549	79 (21 neuters, 7 *o*-grade root + -το-)

[a] Counting *ποτόν* 'drink', which is also attested as m. *ποτός*.
[b] Counting *ῥειτά* 'sacred streams at Eleusis' (also m. *ῥειτός*/*ῥῖτος*); *σπαρτόν*/*σπάρτον* 'Spanish broom' (also m. *σπαρτός*/*σπάρτος*); *βρῡτόν*/*βρῦτον* 'beer' (also m. *βρῡτός*/*βρῦτος*).

without exception. We may therefore take adjectives in -το- to have consistent final accentuation and concentrate our attention on the nouns.

By contrast with the nouns in -ρο-, there are more finally accented than recessive nouns in -το-: 58% have final accentuation, 27% are recessive, and the accentuation of 15% is uncertain. Of the words with known accent, the neuter nouns have a slightly, and non-significantly, higher incidence of final accentuation than the non-neuters.[21] The 12 finally accented neuters constitute 75% of the neuters with known accentuation whereas the 34 finally accented non-neuters constitute 67% of the non-neuters whose accent is known. There is thus no evidence from nouns with -το- that neuters are particularly prone to recessive accentuation.

In the following analysis I shall for the most part disregard the words whose accentuation is uncertain;[22] except where otherwise stated all statistics refer only to those words with known accentuation.

[21] $X^2 = 0.39$; $p = 0.53$. A discrepancy as large as or greater than the one obtained would be expected to occur in just over 50% of trials in a situation where there is no systematic difference between the accentuation of neuters and that of non-neuters.

[22] Vine (1998: 71–2 n. 176) suggests that the recessive variants of *παγετός*/*πάγετος* 'frost' and *δακετόν*/*δάκετον* 'biting animal' may be due to influence from the root-accented nouns *πάγος* 'frost' (which he takes to be the base form for the derivation of *παγετός*/*πάγετος*) and *δάκος*, *τό* 'biting animal' (which he takes to have been at least influential in the formation of *δακετόν*/*δάκετον*). I am, however, sceptical about the likelihood that a base form (or a word treated secondarily as a base form) would influence the accent of a derivative in Gk, given the absence of clear Gk cases in which the accentuation of a base form influences that of a derivative (see p. 146). Some words whose accentuation I have treated as uncertain are said by some ancient grammarians to be accented differently in different meanings, but with no general agreement in the grammatical tradition; on these see Wheeler (1885: 116–17).

7.6.1 Root vocalism and accentuation

Seven nouns with *-το-* are formed by adding *-το-* directly to an *o*-grade verbal root: *οἶτος* 'fate, doom' (root **H₁eiˆ-*); *κοῖτος* 'sleep' (root **kˆeiˆ-*); *πόκτος* 'fleece' (root **pekˆ-*); *φόρτος* 'load' (root **bʰer-*); *χόρτος* 'enclosed place, farmyard' (root **gʰer-*); *νόστος* 'return home' (root **nes-*); *πλοῦτος* 'wealth' (root **pleu̯-*). All of these are recessive, irrespective of whether they are semantically clear verbal abstracts (as *νόστος*) or semantically akin to substantivized adjectives (as *φόρτος*) or not easily categorizable (as *πλοῦτος*). All the data therefore suggest that the formation with *-το-* added directly to an *o*-grade verbal root is associated with recessive accentuation.

Constant recessive accentuation is not found in forms whose root has a synchronic *-ο-* or *-ω-* (of any origin) taken over from a synchronic stem of the base verb or noun:

ὀχετός 'water pipe' (*ὀχέω* 'hold fast; carry', or *ὄχος* 'support')[23]
λοπητός 'time of bark peeling off' (*λοπάω* 'let the bark peel off')
κωκῡτός 'shrieking' (*κωκῡ́ω* 'shriek')
φορυτός 'rubbish' (*φορῡ́νομαι* 'become mixed, become stained')
κροκωτός 'saffron-coloured robe' (*κρόκος* 'saffron')
κοντωτόν 'punt' (*κοντός* 'pole')

Constant recessive accentuation is also not found in forms with synchronic *-ο-* or *-ω-* resulting from a radical **H₃*, or from an Aeolic treatment of **r̥* as *-ρο-*:

βοτόν 'farm animal' (< **bH₃-to-*)
βίοτος 'life, means of living' (root **gʷiH₃-*)[24]
πότος 'drinking bout' (< **pH₃-to-*)
ποτόν/*ποτός* 'drink' (< **pH₃-to-*)
βρότος 'blood that has run from a wound, gore' (< **mr̥-to-*[25])
βροτός 'mortal' (< **mr̥-to-*)
γνωτός 'kinsman' (< **ĝneH₃-to-*)

There are three forms with an *o*-grade root and suffixal *-ετο-*, all of them finally accented. In all three cases the *ο* also appears in a related noun, and in the last case additionally in the related verb:

[23] For the uncertainty of the formation (either deverbative or denominative, in the latter case perhaps 'augmentative'), see Vine (1998: 15).

[24] The exact formation of *βίοτος* is disputed, although it is clear that in some way the *o*-colour of the second syllable is due to the **H₃* of the root. For bibliography and some discussion see Vine (1998: 69–70 with n. 168).

[25] Assuming a connection with Skt *mūrtá-* (adj.) 'run', *mūrchati* 'become solid, thicker', root **mr̥(H)-*; see Table 7(a) note j.

τοκετός 'childbirth, delivery' (τόκος 'childbirth')
βροχετός 'wetting, rain' (βροχή 'rain')
κοπετός 'noise (esp. lamentation)' (κόπος 'striking'; κόπτω 'cut, strike')[26]

The influence of *o*-grade root vocalism on accentuation is thus confined to a small group of words following an unproductive and apparently archaic pattern in which -το- is added directly to a genuine (i.e. historical as well as synchronic) *o*-grade root.

As mentioned above (p. 178), two -το- nouns built on laryngeal-final roots have what has most often been taken to be a disyllabic reflex of the zero-grade root: κάματος 'toil' and θάνατος 'death'. Given that only two words are involved (at least if we do not for the moment consider these forms to belong to any wider group), one might not need to take too seriously the coincidence that both are recessive. However, a widespread view represented, for example, by Rix (1992: 73–4) takes the root accent to be crucial for the appearance of the disyllabic reflex. On this view, accented *CRHC sequences developed in Greek into CVRVC,[27] as in κάματος < *$\hat{k}m̥H_2$-*to*-, θάνατος < *$d^hn̥H_2$-*to*-, whereas unaccented *CRHC sequences developed into CRV̄C, as in -κμητός < *$\hat{k}m̥H_2$-*tó*- 'wrought'[28] and θνητός < *$d^hn̥H_2$-*tó*- 'mortal'. These two minimal pairs constitute the most compelling evidence for the view in question, if the pre-forms for κάματος and θάνατος have been correctly reconstructed. If this view is correct, the root accent of κάματος and θάνατος must be extremely archaic, since it must go back to a time before CRHC sequences had split into CRV̄C and CVRVC reflexes. On the other hand, the accent on the (*ex hypothesi*) zero-grade root must have arisen at a period when the zero grade no longer correlated with lack of accent. We shall return to this question once the overall accentual split in nouns with -το- has been addressed.

The important point here is that two types of noun with -το-, those with -το- added to an *o*-grade root and those with -το- added to a CVRV form of a laryngeal-final root, display consistent recessive accentuation. Given the overall preference for final accentuation in nouns with -το-, the appearance of consistent root accentuation in these types should be of relevance for an overall history of accentuation in nouns with -το-.

[26] For the formation of βροχετός, see p. 180. On τοκετός, see n. 20 above. κοπετός could in principle be deverbative to κόπτω 'cut, strike' or denominative (perhaps augmentative?) to κόπος 'striking, beating'.

[27] C = any consonant; R = any resonant; H = any laryngeal; V = any (short) vowel; V̄ = any long vowel.

[28] Attested as a simplex only in Hesychius (κ 3080 Latte) and at *EM* 521. 31; otherwise appearing in compounds such as ἄκμητος 'unwearied'.

7.6.2 Suffixes of the form -ετο- and accentuation

Table 7(c) shows the nouns included in the data considered here and ending in synchronic -ετος or -ετον, of whatever source. At first sight, nouns with synchronic -ετο- appear to display an overwhelming propensity for final accentuation. This impression is if anything strengthened if we exclude the words σκελετός 'dried body, mummy', ἔμετος 'vomiting', and ἀλετός/ἄλετος 'grinding', in which the -ε- of the second syllable may derive from the $*H_1$ at the end of the root rather than from an original -*e*-.[29] There remain 13 finally accented nouns with -ετο-, 3 recessive ones, and 2 of uncertain accentuation.

However, the proportion of nouns with -ετο- that is recessive is, although small, reasonably in line with the proportion of -το- nouns as

Table 7(c). *Nouns with synchronic -ετο-*

Finally accented	Recessive	Uncertain or variable accent
14 words	4 words	3 words
ἀετός/αἰετός 'eagle'	ἔμετος 'vomiting'	παγετός/πάγετος 'frost'
σταγετός 'drop'	(σ)κάπετος 'ditch, trench'	δακετόν/δάκετον 'biting animal'
πνῑγετός 'choking, stifling'	κινώπετον 'venomous beast'	ἀλετός/ἄλετος 'grinding'
τοκετός 'childbirth, delivery'	ῥυᾰχετος 'unstable crowd'	
σκελετός 'dried body, mummy'		
κοπετός 'noise (esp. lamentation)'		
ἑρπετόν 'creeping thing; reptile'		
τυπετός 'beating the breast, mourning'		
πυρετός 'fiery heat; fever'		
ὗετός 'rain, heavy shower'		
νιφετός 'falling snow, snowstorm'		
συρφετός 'sweepings, refuse, litter'		
ὀχετός 'water pipe'		
βροχετός 'wetting, rain'		

[29] The roots involved are $*sk(e)lH_1$-, $*\underline{\mu}(e)mH_1$-, and $*H_2(e)lH_1$-. Cf. Vine (1998: 14, emphasizing the various possible pre-forms for these words, as $*\underline{\mu}(e)mH_1$-*to*- or $*\underline{\mu}(e)mH_1$-*eto*- for ἔμετος); Sihler (1995: 622, reconstructing $*\underline{\mu}emH_1$-*to*- as the pre-form for ἔμετος, but perhaps intending the adjective ἐμετός, attested at *Suda* ε 975).

a whole that is recessive, once the type of *φόρτος* 'load' and that of *θάνατος* 'death' and *κάματος* 'toil', with consistent recessive accentuation (see § 7.6.1 above), have been excluded.[30] This point is illustrated by the figures in Table 7(d). I have excluded from the words counted here not only the ambiguous forms with synchronic *-ετο-* just mentioned (*ἕμετος* etc.) but also the following that do not have synchronic *-ετο-* but either were or may have been formed with *-eto-* historically: *ῥειτά/ῥειτός/ῥῖτος* 'sacred stream(s) at Eleusis', from **sreu̯-eto-*; *ἀροτός/ἄροτος* 'corn-field', possibly from **H₂erH₃etos*; *βίοτος* 'life, means of living', possibly from **gʷiH₃etos*; and *πότος* 'drinking bout' and *ποτόν/ποτός* 'drink', both potentially from **pH₃etos*.[31] Of the words with known accent, 81% of the nouns with *-ετο-* are finally accented, as compared with 84% of those without *-ετο-*. The nouns clearly formed with *-ετο-* thus display almost the same incidence of final accentuation as those clearly not formed with *-ετο-*.[32] More importantly, none of the categories into which nouns with *-ετο-* have been divided on the basis of their formation or semantics clearly displays consistent final accentuation. Of the three words that clearly have a suffix *-ετο-* and recessive accentuation, *(σ)κάπετος* 'ditch, trench' is deverbative in formation and may be a substantivized adjective or, if there is such a category, an original *nomen actionis* in *-ετο-* (see p. 180); *κινώπετον* 'venomous beast,

Table 7(d). *Accentuation of nouns* (i) *clearly formed with -ετο-, and* (ii) *clearly not formed with -ετο- (the types of φόρτος 'load' and θάνατος 'death' are excluded)*

	Nouns with *-ετο-*	Nouns without *-ετο-*
Finally accented	13	31
Recessive	3	6
Uncertain or variable accentuation	2	7
TOTAL	18	44

[30] One analysis of *θάνατος* and *κάματος* in any case involves a suffix *-eto-* (see Waanders 1974), and therefore gives an additional reason for excluding these words from consideration at this point of nouns *not* formed with *-eto-* .

[31] For the reconstructions **H₂erH₃etos*, **gʷiH₃etos*, and **pH₃etos*, see esp. Waanders (1974: 5–6).

[32] A chi-squared test of statistical significance would not yield valid results here as one of the expected frequencies is smaller than five, but given the small number of nouns with *-ετο-* it is clear enough impressionistically that significance should not be attributed to the difference in numbers of finally accented words between the nouns with *-ετο-* and those without.

esp. serpent' is in some way related to κνώψ 'venomous beast', but may ultimately be influenced by deverbative formations such as ἑρπετόν 'creeping thing; reptile' (so Vine 1998: 71); ῥυᾰ́χετος 'unstable crowd' is likely to be denominative to ῥύαξ, gen. ῥύᾱκος, 'rushing stream'.[33] The words whose accentuation is uncertain or variable include one, παγετός/πάγετος 'frost', that has been taken as an augmentative or patterned after old augmentatives or alternatively as an original action noun[34] and one, δακετόν/δάκετον 'biting animal', that may be deverbative in origin but remodelled after δάκος 'biting animal' under the influence of denominative patterns (so Vine 1998: 71). The difficulties are of course increased by the uncertainties surrounding the morphological classification of nouns with -ετο-.

The identification of certain nouns as formed with -ετο- rather than simply -το-, or of certain nouns as formed with -ετο- in a particular function, thus does not provide any obvious help in understanding the overall distribution of accentuation patterns across nouns with -(ε)το-. For this reason, and because the distribution of accentuation patterns across the nouns with -ετο- appears to be remarkably typical of that across the -το- nouns as a whole (again with the exclusion of the types of φόρτος 'load' and of θάνατος 'death'), in what follows I treat nouns with -ετο- together with the remaining nouns with -το- in order to investigate factors independent of the distinction between -το- and -ετο- (or of any distinctions between various functions of -ετο-) that may help to explain the overall distribution of accent patterns among nouns with -το- (including -ετο-).

7.6.3 Chronology and accentuation

Dividing the nouns with -το- into those attested in Homer and those first attested after Homer, as for the nouns with -ρο- (see p. 166), gives the results shown in Table 7(e). Recessive accentuation occurs more frequently among Homeric nouns with -το- than among the post-Homeric ones: 44% of the Homeric nouns with -το- are recessive, as compared with 23% of the post-Homeric words. A difference in proportions as great as this or greater would have about a one in seventeen chance of occurring in a situation where there was no systematic difference between the accentuation of the Homeric and post-Homeric words.[35] Once again, this result could be due to chance, but it is striking enough that other possibilities might be considered. Although the pattern here

[33] So Richter (1909: 20); Schwyzer (1953: 501); Solta (1963: 170). The source of the aspiration of χ in ῥυᾰ́χετος is obscure.

[34] See Schwyzer (1953: 501, taking the word as an augmentative); Vine (1998: 11–12, 70 with n. 170, implicitly taking it as patterned after old augmentatives); Waanders (1974: 3–4, more or less explicitly taking it as an original action noun).

[35] $X^2 = 3.6$; $p = 0.058$.

Table 7(e). *Nouns with -το-* (i) *attested in Homer, and* (ii) *not attested until after Homer*

	Homer	After Homer	TOTAL
Finally accented	15	31	46
Recessive	12	9	21
TOTAL	27	40	67

Examples. Homeric—Finally accented: στρατός 'army, host'; ὗετός 'rain'; κωκῡτός 'shrieking'; φυτόν 'plant'; etc. Recessive: κάματος 'toil'; (σ)κάπετος 'ditch, trench'; φόρτος 'load'; etc.

Post-Homeric—Finally accented: τοκετός 'childbirth'; λικμητός 'winnowing'; σκηπτός 'thunderbolt'; etc. Recessive: ἄτρακτος 'spindle'; ἔμετος 'vomiting'; πόκτος 'fleece'; etc.

is the reverse of that observed for -ρο-, if it is not accidental it again apparently supports the thesis that words attested in Homer may show different accentual behaviour from words first attested after Homer.

However, the difference between Homeric and post-Homeric percentages of recessive words evaporates when we omit from consideration the two types already seen to display constant recessive accentuation: those with -το- added directly to an *o*-grade root and those with a CVRV reflex of a laryngeal-final root. Of these nine words, all except πόκτος 'fleece' are Homeric. When the words in question are omitted 19 Homeric words remain, 4 of them recessive (21%), and 39 post-Homeric words, 8 of them recessive (21%). The percentage of recessive words is now the same for the Homeric as for the post-Homeric data.

Comparison between the Homeric and post-Homeric data thus reveals little that we did not already know. We have already seen that two small groups of archaic words, (*a*) those with -το- added directly to an *o*-grade root and (*b*) the CVRV type, display consistent recessive accentuation. Neither of these types is productive during the historical period and the relevant words are almost all attested in Homer. No chronological factor determining the accentuation of nouns with -το- as a whole has emerged.

7.6.4 Word frequency and accentuation

Counting text frequencies using the Perseus corpus (Crane 1999), as for nouns with -ρο-, gives the results shown in Table 7(f). The numbers of words indicated at the top of each list include those of type *o*-grade root plus -το- and those of type CVRV root plus -το-, but the numbers of such words are indicated in parentheses. Words of the two types in question are placed at the end of each list and divided from the rest by a line of points.

Table 7(f). *Frequencies of nouns with suffix -το- (per* c.*3,400,000 words)*

Occurrences in corpus	Finally accented words	Recessive words
0	19 words *σταγετός* 'drop' *πνῑγετός* 'choking, stifling' *σκελετός* 'dried body, mummy' *τυπετός* 'beating the breast' *βροχετός* 'wetting, rain' *λικμητός* 'winnowing' *λοπητός* 'time of bark peeling off' *μασητά* 'chewings (of food)' *θυητά* 'fumigations' *σκαφητός* 'hoeing, digging' *σπαρακτόν* 'rubble' *καμπτός* 'turning-point' *ἑρπτόν* 'creeping thing' *δαρτά fish that must be skinned* *παστός* 'bridal canopy or curtain' *σηστός* 'sifter' *ἀμυλιδωτόν* 'kind of tunic' *κοντωτόν* 'punt' *καρυωτός* 'date palm, date'	3 words (1 with *-το-* added directly to an *o*-grade root) *κινώπετον* 'venomous beast, serpent' *ψάμμητον kind of cake* . . . . *πόκτος* 'fleece'
1–100	21 words *τοκετός* 'childbirth' (1) *κοπετός* 'noise (esp. lamentation)' (1) *ἑρπετόν* 'creeping thing' (9)	14 words (4 with *-το-* added directly to an *o*-grade root, 1 CVRV type) *ὄρχατος* 'row of trees; orchard, garden' (6)

Table 7(f). (*Cont'd*)

Occurrences in corpus	Finally accented words	Recessive words
	πυρετός 'fever' (19) *ὗετός* 'rain' (13) *νιφετός* 'falling snow' (7) *συρφετός* 'sweepings' (4) *ὀχετός* 'water pipe' (28) *ἀλαλητός* 'victory shout' (11) *ποτητά* 'birds' (1) *ἔψητός small fish boiled for eating* (1) *φρῡκτός* 'firebrand, torch' (9) *βοτόν* 'farm animal' (17) *σκηπτός* 'thunderbolt' (6) *ναστός* 'well-kneaded cake' (2) *κωκῡτός* 'shrieking' (13) *φορυτός* 'rubbish' (2) *λεπιδωτός Nile fish with large scales* (1) *μισθωτός* 'hireling, hired servant' (26) *κροκωτός* 'saffron-coloured robe' (8) *γνωτός* 'kinsman' (7)	*ἔμετος* 'vomiting' (3) *(σ)κάπετος* 'ditch, trench' (6) *ῥυᾰ́χετος* 'unstable crowd' (1) *λήϊτον* 'council-chamber' (2) *βόλιτον* 'cow dung' (2) *ἄτρακτος* 'spindle' (17) *πότος* 'drinking bout' (50) *βρότος* 'gore' (5) . . . . *οἶτος* 'fate, doom' (14) *κοῖτος* 'sleep' (14) *φόρτος* 'load' (19) *χόρτος* 'enclosed place, farmyard' (17) *κάματος* 'toil' (55)
101–200	4 words *ἀ̰ετός/αἰετός* 'eagle' (116) *θνητός* 'mortal' (193) *ποτόν* 'drink' (126) *φυτόν* 'plant' (122)	2 words (1 with *-το-* added directly to an *o*-grade root) *βίοτος* 'life, means of living' (124) . . . . *νόστος* 'return home' (121)
201–300	0 words	0 words

Table 7(f). (*Cont'd*)

Occurrences in corpus	Finally accented words	Recessive words
301–400	0 words	0 words
401–500	0 words	1 word (with -το- added directly to an *o*-grade root) . . . . πλοῦτος 'wealth' (453)
> 500	2 words στρατός 'army' βροτός 'mortal man (/woman)'	1 word (CVRV type) θάνατος 'death'

These data may again be represented in chart form. The words with *o*-grade root plus -το-, or with CVRV root plus -το-, which are all recessive, have been shown as a separate column for each frequency category in Charts 7(a) and (b). Chart 7(a) shows the absolute numbers of words of each type for each frequency category, while Chart 7(b) shows the corresponding percentages. For Chart 7(b), all the words occurring over 100 times in the corpus (Crane 1999) have been taken together, as in the case of the equivalent chart for nouns with -ρο- (Chart

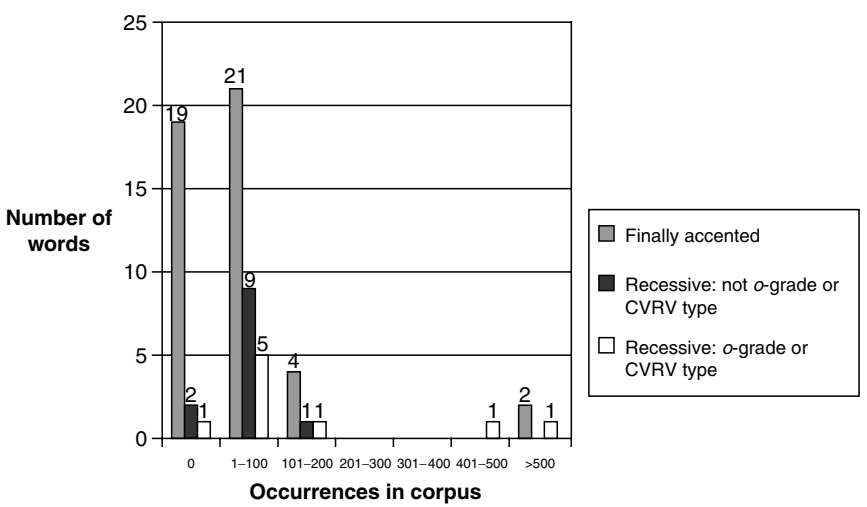

Chart 7(a). Nouns with suffix -το- (absolute numbers)

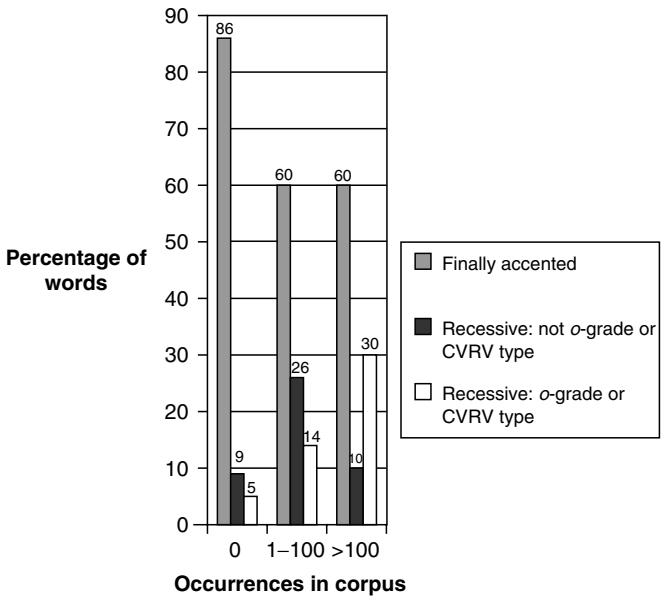

Chart 7(b). Nouns with suffix *-το-* (percentages)

6(b)). Chart 7(c) shows the percentages of finally and recessively accented words for each frequency category when the words with *o*-grade root plus *-το-* and those with CVRV root plus *-το-* are left out of account. The general outline of the frequency distributions when the words with *o*-grade root plus *-το-* and those with CVRV root plus *-το-* are disregarded (Chart 7(c)) resembles that for nouns with suffix *-ρο-* (Chart 6(b)). Again, the percentage of finally accented nouns is lowest for the middle column and higher on either side whereas the percentages for recessive nouns show the inverse pattern. By contrast with the nouns in *-ρο-*, the nouns in *-το-* are more likely to be finally than recessively accented, regardless of their frequency.

The words formed by adding *-το-* directly to an *o*-grade verbal root (the type of *φόρτος* 'load') and those formed by adding *-το-* to a laryngeal-final root in the form CVRV (*κάματος* 'toil' and *θάνατος* 'death') clearly do not fit into the same pattern. While there are not many of these words, they are found throughout the range of frequencies and always display recessive accentuation, irrespective of text frequency.

It is thus worth trying to explain firstly why for *-το-* nouns in general there is a relationship between text frequency and accentuation, and secondly why the type of *φόρτος* 'load' and that of *κάματος* 'toil' display

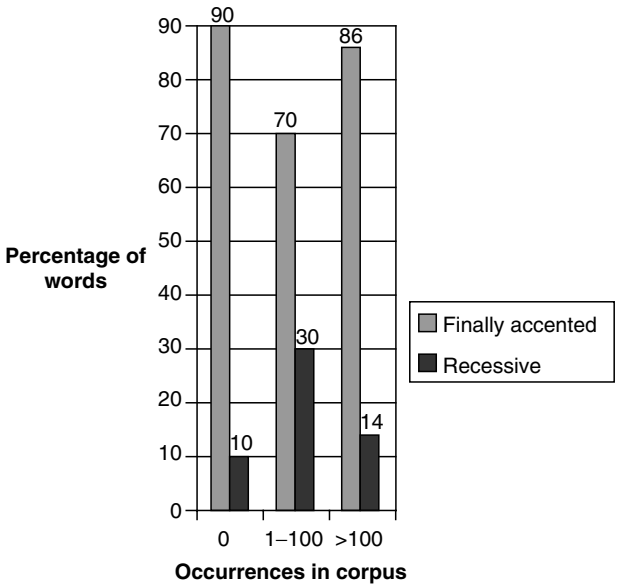

Chart 7(c). Nouns with suffix *-το-* (percentages excluding *ο*-grade and CVRV types)

consistent recessive accentuation, irrespective of text frequency and contrary to the general preference for final accentuation among nouns with *-το-*. We shall return to these issues in Chapter 10, after first considering words with *-νο-* and *-λο-*.

8 WORDS WITH SUFFIX *-νο-*

8.1 Formation

Greek inherited from Indo-European a suffix *-no-* that formed adjectives on verbal roots, as in *ἁγνός* 'holy' (cf. *ἄζομαι* 'stand in awe of') or *δεινός* 'fearful' (cf. *δείδω* < **de-dṷoi̯-a* (old perf.) 'fear', aor. *ἔδεισα* <**e-dṷei̯-s-m̥*). These adjectives belong historically with the Sanskrit past participles passive in *-na-*, e.g. *chinná-*, past participle passive of *chid-* 'split'; the type is not productive in Greek.

In some instances, *-νο-* functions as a Caland suffix: it has a particular propensity for appearing on roots that also make derivatives using other Caland suffixes, as in *ἐρεμνός* 'dark' (cf. *ἔρεβος*, *τό* 'place of nether darkness'), *πυκνός* 'compact' (cf. *πυκιμηδής* 'shrewd', *πύκα* 'solidly', *περιπευκής* 'very sharp', *ἐχεπευκής* 'sharp'), and *σφεδανός* 'vehement' (cf. *σφοδρός* 'vehement').[1]

Both Risch (1974: 97–9) and Nussbaum (1976: 60) distinguish in principle between an Indo-European deverbative suffix **-no-* and Caland **-no-*, but as Nussbaum (1976: 60) notes, it is often difficult to make this distinction in practice since both a Caland system and a verbal root may exist or have existed. Thus, beside *κεδνός* 'careful' we have both the verb *κήδομαι* 'care for' and the Caland forms *κῆδος*, *τό* 'care' and *κήδιστος* 'most cared for' (Risch 1974: 99). Similarly, beside *σμερδνός* 'fearful' we find both the Old High German verb *smerzan* 'be in pain' and a Greek Caland adjective *σμερδαλέος* 'fearful' (Risch 1974: 98).[2]

Other *-νο-* adjectives again are secondary derivatives in which *-νο-* has been added after another suffix, very often *-es-*. The outcome of **-es-no-* was Attic-Ionic */-ēno-/* (written *-ειvο-*) and Aeolic */-enno-/* (written *-εννο-*). Secondary derivatives in *-νο-* include *παιδνός* 'childish' (cf. *παῖς* 'child' < **pau̯-id-*), *ἀκμηνός* 'full-grown' (cf. *ἀκ-μή* 'point, edge', *ἀκή* 'point'), *φαεινός* 'shining' (cf. *φά-ος*, *τό* 'light'), and *δᾱνός* 'parched' (cf. *δά-ος*, *τό* 'firebrand, torch').

For some words in *-ειvο-*, such as *ἐρατεινός* 'lovely' and *κελαδεινός* 'noisy', no corresponding *s*-stem is attested and quite possibly none ever existed. At least some words in *-ειvο-* were probably formed directly

[1] See Risch (1974: 99). However, the difference in root ablaut between *σφεδανός* and *σφοδρός* suggests that we should perhaps take seriously the suggestion of an old **r/n*-stem (Benveniste 1935: 20).

[2] For Gk *-αλεο-* as a member of the Caland system, see Risch (1974: 104).

beside related words (e.g. ἐρατός 'lovely', κέλαδος, ὁ 'din') on the model of other adjectives in -ειν̆ο- (Chantraine 1933: 196).[3]

A number of adjectives relating to particular times, such as ἐαρινός 'of spring' (cf. ἔαρ, gen. ἔαρος 'spring'), and some expressing spatial concepts, such as ἀδινός 'close, crowded' (cf. ἀδρός 'solid'), end in -ινός. Here the suffix -νο- has been added after an -ι- that may in origin be the Indo-European locative singular ending *-*i* (Risch 1974: 100–1; cf. pp. 272–5). In addition, a large number of adjectives of material (e.g. λᾶϊνος 'of stone') end in -ινος, and a smaller group have a suffix which appears to be -υνο- or -συνο- (e.g. σχέδυνος 'tenacious', μαντόσυνος 'oracular'). We shall return in Chapter 12 to the formation of these various groups of adjectives with what appears to be a suffix -νο- preceded by -ι- or -(σ)υ-.

Nouns in -νο-, which also exist, are generally unproductive in Greek (Chantraine 1933: 191). Some are probably substantivized adjectives. Thus, κύκνος 'swan' has been plausibly connected with Sanskrit *śukrá-* 'bright' and *śócati* 'shine'. This etymology makes it likely that κύκνος was originally an adjective meaning 'white', developing semantically to mean 'white bird' and hence 'swan'. A word for 'toad', φρῡνός/φρῦνος, is probably cognate with Old High German *brūn* < *b^hruHno- 'brown'. A semantic development from 'brown' to 'toad' would be similar to that from 'white' to 'swan' postulated for κύκνος. In the case of στρίφνος 'tough meat' we have a corresponding adjective attested within Greek (στριφνός 'firm, hard').

Other nouns with -νο- do not have a clear history. Thus, there is no particular evidence that λύχνος 'lamp', related to λεύσσω 'see', originated as an adjective, but such an origin cannot be ruled out. One class of nouns with -νο- was, however, productive in Greek as a substantival formation. This is the class of nouns with the complex suffix -ανο-, which seems to have become productive for forming neuter names of implements (Chantraine 1933: 198; Buck and Petersen 1945: 261).[4] Thus δρέπανον 'sickle' is derived from δρέπω 'pluck'. The suffix -ανο- may have been extracted in part from words whose -α- originally belonged to the stem. Chantraine (1933: 196) cites as possible examples πελανός/πέλανος 'thick liquid substance' and the adjective ἀγανός 'gentle', although the etymologies of both are disputed.[5] Another possible origin for -ανο- would be a Sievers's variant *-*n̥no*- of the suffix *-*no*-, originally occurring after a sequence of two consonants or

[3] On ἐρατεινός see also Frisk (1960–72: i. 547); on κελαδεινός, Frisk (1960–72: i. 813).

[4] Hamp (1985: 103) notes the productivity of those -ανο- neuters having *o*-grade root vocalism independently of the vocalism of related forms (e.g. πλόκανον 'plaited work, rope'; ξόανον 'image carved of wood'). The majority of -ανο- neuters, however, do not have *o*-grade root vocalism (cf. δρέπανον 'sickle').

[5] See Frisk (1960–72: i. 7, ii. 494). I have excluded both words from my main list of words with -νο- because of the etymological difficulties.

long vowel plus consonant, as in ὄργανον 'implement' (cf. Chantraine 1933: 196).

There are adjectives as well as nouns in -ανο-, and it is possible that some of the nouns are substantivized adjectives. Beside ὄργανον 'implement' there exists an adjective ὄργανος 'working, forming';[6] conceivably the noun originated as a substantivized neuter of the adjective. The neuter names of instruments in -ανο- form too coherent a formal and semantic group, however, for it to be likely that all are substantivized adjectives. The complex suffix -ανο-, whatever its ultimate origins, appears to have become productive for forming neuter nouns directly.

8.2 Comparative evidence

In Vedic Sanskrit, deverbative adjectives with -*na*- usually have final accentuation (Debrunner 1954: 726–32). Adjectives with -*na*- that are not deverbative, or not demonstrably deverbative, are split between final and non-final accentuation, as are nouns with -*na*- (1954: 732–7).

Eight word equations between Greek and Vedic or between Greek and reconstructed proto-Germanic can be adduced, some of them closer and clearer matches than others.[7] At least one member of each equation is finally accented. Most of the equations involve nouns on both sides, but adjectives are also represented. If the word for 'naked' belongs here, both terms (γυμνός, Skt *nagná*-) are adjectival. In other instances only one member is an adjective (ἁγνός 'holy' : Skt *yajñá*- m. 'worship, sacrifice'; approximate correspondence between στέρνον 'breast' and Skt *stīr̥ná*- 'spread out'). The equations are shown in Table 8(a).

8.3 Descriptive accounts

The descriptive handbooks of Greek accentuation state that adjectives ending in -νος usually have final accentuation.[8] They also mention two important sets of exceptions: adjectives of material ending in -ινος (e.g. βύβλινος 'of papyrus') and adjectives in -υνο- or -συνο- (e.g. θάρσυνος 'daring'). Both of these types have consistent recessive accentuation. They will not be discussed in the present chapter, but their relationship

[6] This adjective does not appear in my main list of words with -νο- because it is attested within the period covered only in inscriptions (as an epithet of Athena) and as a suspect reading at Euripides, *Andr.* 1014.

[7] I ignore the equations that have been suggested between τίτανος 'white earth, chalk' and Skt *śvítna*- 'white, pale' and between Ὠκεανός 'Oceanus' and Skt *āśáyāna*- 'lying round'; for details see Frisk (1960–72: ii. 904, 1145).

[8] Chandler (1881: 123); Vendryes (1904: 172); Postgate (1924: 49); Bally (1945: 73).

Table 8(a). *Word equations between Greek and Sanskrit or Germanic words continuing an IE suffix* *-no-

Greek	Outside Greek	Note on accents
i. *Certainly exact equations*		
ἑανός, ὁ 'fine robe'	Skt *vásana-* n. 'garment'	Final accent in Gk, root accent in Skt
τέκνον, τό 'child'	ON *þegn* 'man, servant', OE *ðeġn* 'servant, warrior, man', OS *thegan* 'servant, child', OHG *thegan* 'servant, warrior', PGmc **þeγna-* m. < **tek-nó-s*	Root accent in Gk, final accent in PGmc
ii. *Possibly exact correspondences, but phonological developments less clear and/or connections not certain*		
ἁγνός 'holy'	Skt *yajñá-* m. 'worship, sacrifice'	Final accent in Gk and Skt
ὦνος, ὁ 'price'	Skt *vasná-* n. 'price'[a]	Root accent in Gk, final accent in Skt
iii. *Approximate word equations (with some difference of vocalism or exact suffixation)*		
ὕπνος, ὁ 'sleep'	Skt *svápna-* m. 'sleep', OE *swefn*, OS *swefan* 'sleep' < **su̯epnó-*[b]	Root accent in Gk and Skt, final accent in PGmc
γυμνός 'naked'	Skt *nagná-* 'naked'[c]	Final accent in Gk and Skt
στέρνον, τό 'breast'	Skt *stīrṇá-* 'spread out'	Root accent in Gk, final accent in Skt
iv. *Equation uncertain and, if correct, approximate*		
ἰπνός, ὁ 'oven, furnace'	OE *ofen*, OHG *ovan*, ON *ofn* 'oven', PGmc **ofna* < **úfna-*[d]	Final accent in Gk, root accent in PGmc

[a] On the difficulties raised by this equation, see the references given at Ch. 5 n. 22.

[b] The Gk form has a zero-grade root; a full-grade root is found in the Skt and Gmc forms. An original *r/n*-stem, rather than an original *-no-* suffix, is likely (see Frisk 1950; 1960–72: ii. 966 s.v. ὕπαρ, 971 s.v. ὕπνος) and for this reason I have excluded the word from my main list of words with *-vo-*.

[c] The original internal structure of this word is unclear; the various forms found in IE languages can only be related to one another on the assumption of sporadic (perhaps tabuistic) changes. According to Nussbaum (1976: 92–3), the word originally had the suffix *-mo-* in Indo-Iranian and Gk. Mayrhofer (1986–2001: ii. 5) reconstructs IE **neg$^{\text{w}}$nó-* as the immediate pre-form for Skt *nagná-*, with Gk γυμνός the result of sporadic changes.

[d] For the several phonological difficulties of this equation see Chantraine (1968–80: 467); Vries (1961: 417). I exclude ἰπνός from my main list of words with *-vo-* in view of the uncertainty of its etymology and internal structure.

to simple *-νο-* and their accentual behaviour will be considered in Chapter 12.

The handbooks attempt little in the way of rules for the accentuation of nouns with *-νο-*. Vendryes (1904: 171–2) gives some empirical rules, with exceptions, for small sub-groups of words ending in *-νος*. Chandler (1881: 82–4), Postgate (1924: 45–6), and Bally (1945: 61) state that nouns ending in *-νος* are generally recessive and list exceptions. Our attention is drawn in particular to two groups of exceptions: nouns in *-ῑ́νος* (e.g. *κεστρῖ́νος* 'mullet') normally have intermediate accentuation, and polysyllabic nouns in *-ωνός* (e.g. *υἱῶνός* 'grandson') are finally accented. The suffix *-ῑ́νο-* primarily forms names of animals; synchronically *-ῑ́νο-* is best analysed as a separate suffix with its own accentual properties. From a historical point of view the suffix and its accentuation are curious, but I shall have nothing further to say on this subject.[9]

The group of nouns ending in *-ωνός* is very small, and the origin and original semantics of *-ωνο-* are unclear.[10] Only two nouns, *οἰῶνός* 'large bird' and *υἱῶνός* 'grandson', are sufficiently likely to have been formed with a suffix *-(ω)νο-* for inclusion in my data. Following Meid (1956: 276) and Schmeja (1963: 26–7, 35–6), I take *οἰῶνός* and *υἱῶνός* to be formed with the suffix *-νο-* added to a lengthened stem-final vowel *-ο-*.

8.4 Analysis of data

The distribution of accentuation patterns for adjectives and nouns with *-νο-* is as shown in Table 8(b). The number of nouns in each category is first given as a whole and then the number of neuters included is shown in parentheses. As with *-ρο-* and *-το-*, a majority of words with suffix *-νο-* consists of adjectives. I have excluded from consideration for the moment two important groups of recessive adjectives whose suffixes end in the sequence *-νο-*, possibly related to simple *-νο-*: adjectives of material in *-ινο-*, and adjectives with a suffix *-υνο-* or *-συνο-*. These sets of exceptions apart, adjectives with *-νο-* are almost all finally accented. As already noted, the generally high incidence of final accentuation in adjectives with *-νο-* makes the consistent recessive accentuation of adjectives of material in *-ινο-* and adjectives in *-(σ)υνο-* particularly striking if these suffixes are indeed related to simple *-νο-*; we shall return to this problem in Chapter 12. For the present, we may take final accentuation to be normal for adjectives with *-νο-* in general and concentrate our attention on the nouns.

[9] For a hypothesis regarding the formation of nouns with *-ῑ́νο-*, see Meid (1956: 274–5). On their accentuation, see Meid (1957: 23–5).

[10] For a variety of explanations see Benveniste (1969: i. 268); Schwyzer (1953: 480); Meid (1956: 276); Schmeja (1963: 26–7, 35–6); Chantraine (1968–80: 1154 s.v. *υἱός*).

Table 8(b). *Adjectives and nouns with a suffix -νο-*

	Adjectives	Nouns
Finally accented	106	16 (2 neuter)
Recessive	7	56 (37 neuter)
Intermediate	0	1 (0 neuter)
Accent uncertain	3	6 (2 neuter)
TOTAL	116	79 (41 neuter)

Examples. Finally accented nouns: *κρημνός* 'overhanging bank'; *καπνός* 'smoke'; *υἱωνός* 'grandson'; etc. Recessive nouns: *δρέπανον* 'sickle'; *σπίνος* 'chaffinch'; *κύκνος* 'swan'; etc. Intermediate nouns: *καρκίνος* 'crab'. Finally accented adjectives: *ἐδανός* 'edible'; *ἁγνός* 'holy'; *δεινός* 'fearful'; etc. Recessive adjectives: *κάγκανος* 'dry'; *λάγνος* 'lecherous'; *λίχνος* 'gluttonous'; etc.

Nouns with *-νο-* are predominantly recessive, like nouns with *-ρο-*: 71% are recessive, 20% are finally accented, and the accent of 8% is uncertain. One word, *καρκίνος* 'crab', has intermediate accentuation. In the following analysis we shall disregard the words whose accentuation is uncertain, and also *καρκίνος* 'crab', whose accent is entirely uncharacteristic of nouns with *-νο-*.[11]

The nouns with *-νο-* having final or recessive accentuation can be divided into those attested in Homer and those first attested after Homer, with the results shown in Table 8(c). Final accentuation occurs

Table 8(c). *Nouns with -νο-* (i) *attested in Homer, and* (ii) *not attested until after Homer*

	Homer	After Homer	TOTAL
Finally accented	10 (1 neuter)	6 (1 neuter)	16
Recessive	14 (6 neuter)	42 (31 neuter)	56
TOTAL	24 (7 neuter)	48 (32 neuter)	72

Examples. Homeric—Finally accented: *κρημνός* 'overhanging bank'; *καπνός* 'smoke'; *κεραυνός* 'thunderbolt'; etc. Recessive: *δρέπανον* 'sickle'; *τέκνον* 'child'; *κύκνος* 'swan'; etc.

Post-Homeric—Finally accented: *νωτιδανός kind of dog-fish or small shark*; *ὀρφανός* 'orphan'; *τιθηνός* 'foster-father, nurse'; etc. Recessive: *κόπανον* 'chopper'; *ῥάμνος* 'prickly shrub'; *τόρνος* 'tool for drawing a circle'; etc.

[11] Schwyzer (1953: 490) asks himself whether *καρκίνος* is 'statt **-ινός*' (presumably by Wheeler's law, on which see pp. 88–96, but there are otherwise no survivals of Wheeler's law accentuation among nouns or adjectives with *-νο-*). The textually difficult passage Arc. 74. 19 suggests hesitation over the choice of *καρκίνος* or *καρκῖνος* as the correct form (see Schmidt ad loc.). The *-ι-* is in reality short, but the apparent uncertainty in the grammatical tradition suggests that the word was regarded as akin to animal names with the suffix *-ῖνο-* (e.g. *κεστρῖνος* 'mullet').

more frequently among Homeric than among post-Homeric nouns with *-νο-*: 42% of the Homeric nouns with *-νο-* are finally accented, as compared with 12.5% of the post-Homeric nouns. This difference in proportions would have a chance of only about one in two hundred of occurring in a situation where there was no systematic difference between the accentuation of Homeric and post-Homeric nouns with *-νο-*.[12] The pattern here is the same as that observed for words with suffix *-ρο-*, but this time the result is far more striking and its statistical significance much greater.

However, if we take into account the numbers of neuter nouns with *-νο-* involved, we find that these are almost all recessive and heavily concentrated in the post-Homeric group. One set of neuters, those in *-ανο-*, has entirely consistent recessive accentuation and these constitute the majority of neuter nouns with *-νο-*. All 32 of these[13] are recessive, and all except two are post-Homeric. When these 32 are disregarded, the distribution of the remaining words is as shown in Table 8(d).

We are now left with a much less striking, and statistically non-significant,[14] difference in the proportions of finally accented words. One important factor relating to the accentuation of nouns with *-νο-* is thus the consistent recessive accentuation of neuter nouns in *-ανο-*. It is worth considering whether any light can be shed on the accentuation of the remaining nouns with *-νο-*.

We observed for nouns with *-ρο-* and *-το-* that accentuation and text frequency were interrelated. Counting text frequencies for nouns with *-νο-* using the Perseus corpus (Crane 1999) gives the results shown in Table 8(e). The numbers of words indicated at the top of each list include the neuters in *-ανο-*, but the numbers of these are indicated in parentheses. Neuters in *-ανο-* are placed at the end of each list and

Table 8(d). *Nouns with -νο-* (i) *attested in Homer, and* (ii) *not attested until after Homer, discounting -ανο- neuters*

	Homer	After Homer	TOTAL
Finally accented	10	6	16
Recessive	12	12	24
TOTAL	22	18	40

[12] $X^2 = 7.88$; $p = 0.0050$.

[13] Including *πευκέδανον* 'sulfur-wort', which also has the feminine form *πευκέδανος*.

[14] $X^2 = 0.61$; $p = 0.44$. A discrepancy as large as or larger than the one obtained would be expected to occur in over 40% of trials in a situation where the finally accented words were randomly distributed between the Homeric and post-Homeric groups.

Table 8(e). *Frequencies of nouns with suffix -νο- (per c.3,400,000 words)*

Occurrences in corpus	Finally accented words	Recessive words
0	4 words (0 -ανο- neuters) *νωτιδανός kind of dog-fish/small shark* *δελκανός kind of fish* *τιθηνός* 'foster-father, nurse' *ἀγρηνόν* 'net'	22 words (17 -ανο- neuters) *ἄκανος kind of thistle* *σκέπανος a fish* *ῥάφανος* 'cabbage' *σίπυδνος* 'meal-tub' *στρίφνος* 'tough meat' . . . . *τρίβανον measure of capacity* *λάγανον* 'thin broad cake' *φώγανον* 'vessel for roasting barley' *πευκέδανον/πευκέδανος* 'sulfur-wort' *μυρτίδανον myrtle-like plant* *πύρδανον* 'small wood for burning' *πλάθανον* 'dish, mould' *δόκανα* 'two upright parallel bars joined toward each end' *χάσκανον* 'broadleaved burweed' *τραύξανα* 'dry chips' *τρώξανα* 'dry twigs' *σκέπανον* 'covering' *κόπρανα* 'excrements' *πτίσανον* 'peeled barley' *εὖσανα* 'marks burnt in' *κελῦφανον* 'sheath, case' *λεπῦχανον* 'coat, rind'
1–100	9 words (0 -ανο- neuters) *ἑανός/εἱανός* 'fine robe' (7) *φᾱνός* 'torch' (2) *ὀρφανός* 'orphan' (50) *πετηνά* (and variants) 'bird' (10)	30 words (13 -ανο- neuters) *χόανος* 'melting-pot' (2) *γλύφανος* 'tool for carving' (1) *λέπαδνον* 'yoke-strap' (5) *ἔδνον* 'wedding-gift' (25) *σπίνος* 'chaffinch' (2)

Table 8(e). (*Cont'd*)

Occurrences in corpus	Finally accented words	Recessive words
	ῥῑνός 'skin' (31)	*λίκνον* 'winnowing fan' (7)
	κρημνός 'overhanging bank' (61)	*κύκνος* 'swan' (35)
	καπνός 'smoke' (89)	*θάμνος* 'bush' (23)
	πλυνός 'wash-trough' (5)	*ῥάμνος* 'prickly shrub' (2)
	υἱωνός 'grandson' (6)	*στέρνον* 'breast' (97)
		πόρνος 'catamite' (9)
		τόρνος 'tool for drawing a circle' (6)
		βόθῡνος 'hole, trench' (2)
		μόρφνος kind of eagle (2)
		λάχνος 'wool' (1)
		λύχνος 'lamp (49)
		ὤνος 'price paid' (8)
		. . . .
		σπάργανον 'swathing band' (25)
		φρῡ́γανον 'dry stick, firewood' (13)
		ἐρευθέδανον/ἐρυθρόδανον 'madder' (1)
		πλόκανον 'plaited work' (3)
		δρέπανον 'sickle' (25)
		τύμπανον/τύπανον 'kettle-drum' (21)
		κόπανον 'chopper' (1)
		πόπανον 'round cake' (5)
		τρῡ́πανον 'borer' (7)
		ἕδρανον 'seat, abode' (10)
		ὄχανον 'shield-holder' (6)
		λείψανον 'piece left' (25)
		ὄψανον 'apparition' (1)
101–200	2 words (0 *-ανο-* neuters)	2 words (2 *-ανο-* neuters)
	κεραυνός 'thunderbolt' (110)	. . . .

Table 8(e). (*Cont'd*)

Occurrences in corpus	Finally accented words	Recessive words
	οἰωνός 'large bird' (122)	*ὄργανον* 'implement' (179) *ξόανον* 'image carved in wood' (128)
201–300	0 words	0 words
301–400	0 words	1 word (0 -*ανο*- neuters) *στέφανος* 'crown' (361)
401–500	1 word (0 -*ανο*- neuters) *οὐρανός* 'heaven, sky' (488)	0 words
Over 500	0 words	1 word (0 -*ανο*- neuters) *τέκνον* 'child'

divided from the remaining words by a line of points. These data may once again be summarized in chart form. The neuters in -*ανο*-, which are all recessive, have been shown for each frequency category as a separate column in Charts 8(a) and (b). The outline of the frequency

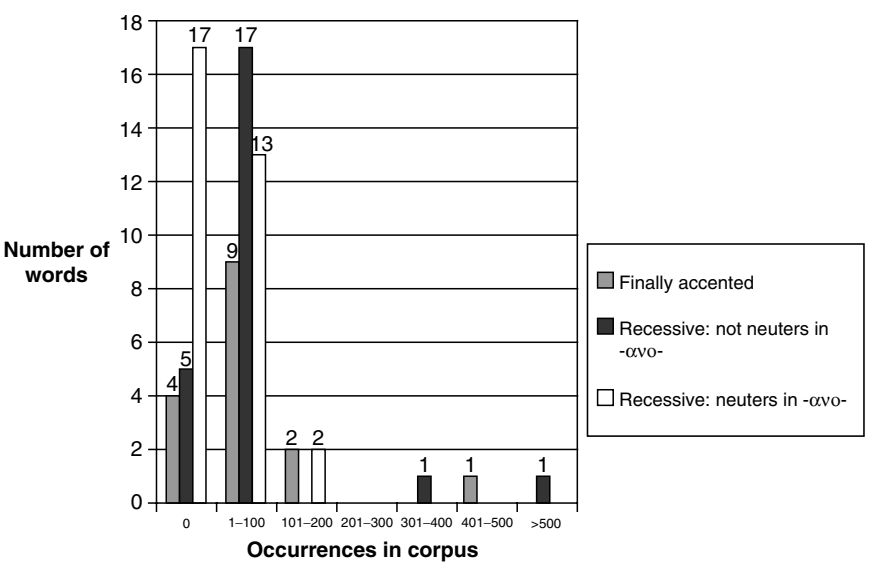

Chart 8(a). Nouns with suffix -*νο*- (absolute numbers)

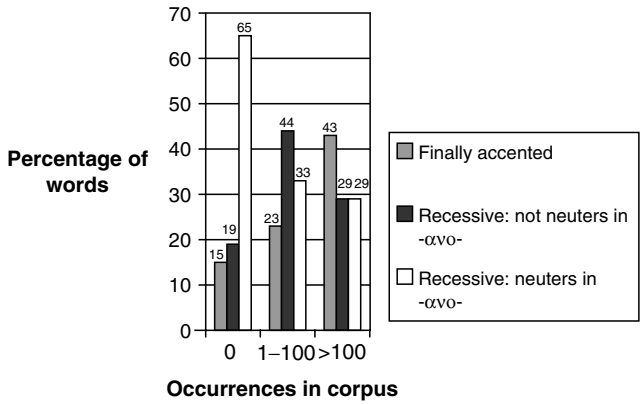

Chart 8(b). Nouns with suffix *-νο-* (percentages)

distributions when the neuters with *-ανο-* are disregarded (Chart 8(c)) resembles that for nouns with *-ρο-* (Chart 6(b)) and that obtained for nouns with *-το-* when the words with *o*-grade root plus *-το-* and those with CVRV root are disregarded (Chart 7(c)). The percentage of finally accented nouns is again lowest for the middle column and higher on either side. The most striking difference in percentages, that obtaining between the frequency range 1–100 and the words occurring over 100

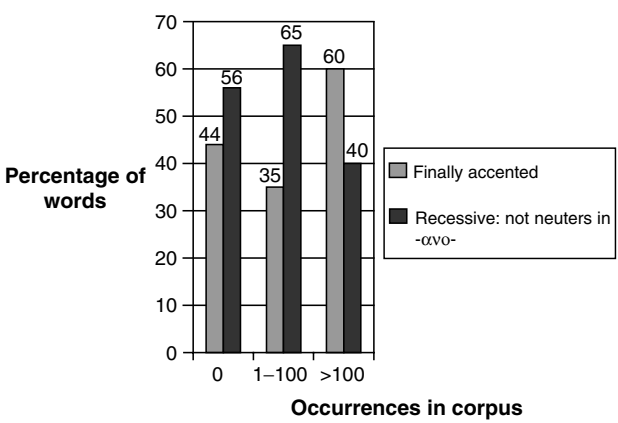

Chart 8(c). Nouns with suffix *-νο-* (percentages excluding neuters in *-ανο-*)

times, is based once again on very few data for the very high frequency range. On the other hand, the pattern gains importance from its recurrence over several suffixes since the quantity of data provided by very high frequency -ρο-, -το-, and -νο- nouns together is rather larger than that for words with any one of these suffixes in isolation.

Several aspects of the accentuation of words in -νο- require explanation. The first is the consistent recessive accent of neuter nouns in -ανο-, a characteristic that is not shared either by most adjectives in -ανο- or by most non-neuter nouns in -ανο-. Secondly, the nouns with -νο- provide some further evidence for a relationship between text frequency and accentuation, and such a relationship is likely to have a reason. Finally, we shall need to explain why adjectives of material in -ινο- and adjectives in -υνο- or -συνο- are consistently recessive in contrast with other -νο- adjectives, which normally have final accentuation. Chapter 10 will be devoted to the accentual characteristics so far noted in nouns with -ρο-, -το-, and -νο-, while the interestingly accented adjectives with -νο- will be considered in Chapter 12. We now, however, turn to words formed with -λο-.

9 WORDS WITH SUFFIX -λο-

Il n'y a pas de règle pour les substantifs en -λος.

Vendryes (1904: 168)

τὰ διὰ τοῦ υλος τρισύλλαβα ποικίλα εὑρίσκομεν παρὰ τὴν τάσιν (We find the trisyllabic words in -υλος to be various in their accentuation).

Ep. Hom. alph. α 266

9.1 Formation

Indo-European had a primary suffix *-*lo*- whose basic function was to derive an adjective from a verbal stem. In Slavonic, the suffix survives as a participle formant (Risch 1974: 107). In Greek, the suffix is found on both adjectives and nouns. At least some of the Greek nouns with -λο- originated as adjectives that were substantivized, and indeed some of these are attested as adjectives as well as nouns (with or without a difference of accent). Thus, γύαλον 'hollow' exists beside an adjective γυαλός 'hollow'. For the noun φῦλον 'tribe', there is an exact correspondence with adjectival function in Old Church Slavonic *bylŭ*, past participle active of *byti* 'to be'.

A number of complex suffixes of shape vowel + -λο- (-αλο-, -ελο-, -ιλο-, -υλο-, -ηλο-, -ωλο-) were extracted from -λο- derivatives to vowel stems and extended to other stems (Chantraine 1933: 241–51). Thus, φειδωλός 'sparing, thrifty' (derived from φείδομαι 'spare') contains a complex suffix -ωλο-; διδάσκαλος 'teacher' (derivative of διδάσκω 'teach') has -αλο-. The complex suffix -ελο- (as in εἴκελος 'like'; cf. ἔοικα 'be like') is likely to be inherited and comparable to the suffix of the Latin adjectives in *-ulus* (e.g. *crēdulus* 'credulous', *bibulus* 'drinking readily') and perhaps some of the Sanskrit adjectives in *-ara-* (e.g. *dravará-* 'running quickly', *patará-* 'flying').[1]

[1] On the Skt type see Debrunner (1954: 215–16), who connects Lat. *crēdulus* etc. but does not mention Gk -ελο-. Chantraine (1933: 244) takes the correspondence between νεφέλη 'cloud' and Lat. *nebula* 'cloud', OHG *nebul* 'mist' as evidence for the antiquity of the suffix form -ελο-. Strictly speaking, this correspondence does not show that *-elo-* was inherited as either an adjectival suffix or a suffix that could form *o*-stem nouns, but an inherited suffix is plausible because of the probably comparable adjectives in Lat. and possibly Skt.

In Greek, the suffix *-λο-*, and complex suffixes including *-λο-*, could be attached to purely nominal as well as to verbal stems. Thus, *ὑδρηλός* 'watery' is a derivative in *-η-λο-* on the stem of *ὕδωρ* 'water' (Chantraine 1933: 242). When attached to nominal stems, the suffix often had a diminutive meaning. For Greek, such a meaning can be most clearly identified for some of the words with complex suffix *-υλο-*, e.g. *ἀρκτύλος* 'bear's cub', diminutive of *ἄρκτος* 'bear' (see Chantraine 1933: 250). Words formed with *-ιλο-* are also often labelled 'diminutives', and indeed the suffix forms a number of names for small animals, e.g. *ποντίλος* 'paper nautilus' (a mollusc), *τροχίλος* 'Egyptian plover' (cf. Chantraine 1933: 249). The possibility of forming diminutives by means of the suffix *-lo-* was inherited; cf. e.g. Latin *porculus* 'young pig' (diminutive of *porcus* 'pig'), Sanskrit *vṛṣalá-/vṛ́ṣala-* m. 'little or contemptible man' (diminutive of *vṛ́ṣan-* m. 'man'); see Risch (1974: 107 n. 93).

No formation in *-λο-* was at all productive in Greek during the historical period (Chantraine 1933: 237, 239). It is also impossible, at least from a Greek point of view, to keep separate the category of diminutives from that of original deverbal adjectives in *-λο-*, since the meanings of many Greek words with *-λο-* do not allow them to be fitted neatly into either category. Should we recognize a diminutive meaning in *φῡ́σαλος kind of toad said to puff itself up*, or was *φῡ́σαλος* originally an adjective meaning simply 'puffing'?[2]

In what follows the group of words containing the suffix *-λο-* is taken to include those with complex suffixes of the form vowel + *-λο-* as well as those with simple *-λο-*. Words with the suffixes *-θλο-* and *-τλο-* are, however, excluded as these suffixes are different in origin and semantics from simple *-λο-* (see Chantraine 1933: 374–5). Words with the suffix *-ιολο-*, borrowed from Latin, are also excluded as are those with other Latin suffixes containing *-λο-*.

9.2 Comparative evidence

There are only two exact word equations relevant to the accentuation of words in *-λο-* (see Table 9(a)), and neither of these provides ideal evidence for the position of the accent in Indo-European. For the first word equation in Table 9(a), the Germanic words reveal that the accent was non-initial in proto-Germanic but not whether it fell on the final or penultimate syllable. The Greek and Sanskrit words forming the

[2] If *φῡ́σαλος* was originally a deverbal adjective, the derivational base would be *φῡσάω* 'blow, puff' (itself derived from *φῦσα* 'pair of bellows') or a lost verb on the same root. Russian *pyxát'* 'breathe heavily' and Slavonic cognates may be related (see Frisk 1960–72: ii. 1056; Vasmer 1953–8: ii. 475).

Table 9(a). *Exact word equations continuing IE suffix *-lo-*

Greek	Outside Greek	Note on accents
ἀγκύλος 'curved'	ON *ǫngull*, OE *angel*, NE *angle*, OHG *angul*, MHG *angel* 'hook' (<**aŋgula*)[a]	Intermediate accent in Gk, non-initial accent in PGmc
**παχυλός* (implied by the adverb *παχυλῶς* 'roughly, coarsely')	Skt *bahulá-* 'thick, broad'	Final accent in Gk and Skt

[a] For the Gmc forms see Lloyd and Springer (1988: 252–3). ON *óll*, *áll* (< **áŋχla*) 'young shoot' derives from a PGmc form with initial accent, but possibly without *-u-* (cf. Vries 1961: 6, but also Lloyd and Springer 1988: 253). Wheeler (1885: 62) and others cite the possible Skt cognate *aṅkura-* m. 'sprout, shoot' (of uncertain etymology) as finally accented. However, *aṅkura-* is not attested in Vedic; Debrunner (1954: 487) lists the word without accent, as does Mayrhofer (1986–2001: iii. 5).

second equation are likely to be parallel but independent creations.[3] The approximate word equation shown in Table 9(b) is cited by Wheeler (1885: 62) as evidence for original final accentuation in Greek *ποικίλος*. However, the value of this equation is diminished by the fact that the suffixation of the Sanskrit form is not identical to that of the Greek (since Sanskrit *-a-* cannot correspond to Greek *-ι-*). The evidence from word equations thus concerns only words in *-υλο-* and *-ιλο-*, and even there it is inadequate. The Greek class of intermediately accented words in *-ιλο-* and *-υλο-* is likely to be an accentual innovation. Good evidence comes not from word equations, however, but from the fact that Vedic has no corresponding group of intermediately accented adjectives in *-ira-* or *-ura-* (suffixes that derive in part from Indo-European **-iro-*, **-uro-*, in part from Indo-European **-ilo-*, **-ulo-*). Non-compound Vedic adjectives in *-ira-* or *-ura-* (of whatever origin)

Table 9(b). *Approximate word equation continuing IE suffix *-lo-*

Greek	Outside Greek	Note on accents
ποικίλος 'many-coloured'	Skt *peśalá-* 'adorned'	Intermediate accent in Gk, final accent in Skt

[3] So Mayrhofer (1986–2001: ii. 220–1); Frisk (1960–72: ii. 484).

usually display final accentuation (see Debrunner 1954: 362, 486–8; Kuryłowicz 1958: 40–1): *ajirá-* 'swift', *vithurá-* 'unsteady', etc.[4]

9.3 Describing the accentuation of words in -λο-

For the thematic suffixes -ρο-, -το-, and -νο-, which appear on both adjectives and nouns, we found that the adjectives almost exclusively display final accentuation whereas the nouns are divided between final and recessive accentuation.[5] The situation is rather different for words with the suffix -λο-. Of the 59 adjectives with -λο- among the words considered here, 27 are finally accented (46%), 13 recessive (22%), 12 intermediate (20%), and 7 uncertain (12%, henceforth to be ignored for statistical statements). Of the 80 nouns with -λο-, 8 are finally accented (10%), 55 recessive (69%), 11 intermediate (14%), and 6 uncertain (7.5%, henceforth to be ignored for statistical statements). Thus, unlike the words with -ρο-, -το-, and -νο-, the words with -λο- allow for three possible accentuation patterns: they may be finally accented, intermediate, or recessive, instead of only finally accented or recessive.[6] Another difference is that for words in -λο- neither adjectives nor nouns can be said to display an almost uniform accentuation; both nouns and adjectives are very much divided between the various possible accentuation patterns. It will be worth trying to explain these differences between the accentual behaviour of words with -λο- and that of words with -ρο-, -το-, and -νο-.

9.3.1 History of the question

Rather disparate claims have been made about the accentuation of words with -λο-:

(*a*) Wheeler (1885: 61–6) claims that adjectives with -λο- are generally accented on the final syllable unless they end in a dactylic sequence, in which case they have intermediate accentuation. Since Wheeler, this claim has sometimes been repeated with a restriction of intermediate accentuation to adjectives in -ιλο- and -υλο- (see (*b*) below).

(*b*) The generalization that adjectives with -λο- are mostly accented on the final syllable is made by, for example, Chandler (1881: 120), Vendryes (1904: 169), Postgate (1924: 49–50), Bally (1945: 72), and Lubotsky

[4] Similarly the rarer Vedic adjectives with *-ila-* and *-ula-* (Debrunner 1954: 362–4, 488–9).

[5] Adjectives of material in -ινο- and adjectives in -υνο- or -συνο- are systematic exceptions; see p. 199 and Ch. 12.

[6] Only one noun of the words with -ρο-, -το-, or -νο-, καρκίνος 'crab', displays intermediate accentuation (see p. 202 with n. 11).

(1988: 131).[7] All of these scholars treat adjectives in *-ιλο-* and *-υλο-* as constituting a class of exceptions with intermediate accentuation.[8] The intermediate accentuation of adjectives in *-ιλο-* and *-υλο-* is generally explained as due to Wheeler's law, except by Chandler, whose account is purely descriptive, and Postgate, who rejects Wheeler's law (following Allinson 1891).[9]

The adjective *παχυλός* 'thickish' is generally mentioned as an exception to the intermediate accentuation of adjectives in *-ιλο-* and *-υλο-* (Chandler 1881: 121; Vendryes 1904: 169; Postgate 1924: 50). Bally (1945: 24) also mentions *παχυλός* but correctly gives an asterisk to the form since it is not attested as such but only inferred from the adverb *παχυλῶς* (Aristotle, *EN* 1094[b]20). For this reason, the word strictly falls outside the data under consideration and is not counted for statistical purposes, but it will be mentioned in what follows where appropriate.

Another exception that is sometimes mentioned (e.g. by Lobeck 1843: 123), also falling strictly outside the data here considered, is *βραχυλός* 'small'. This word appears in the Hesychius manuscript but the passage shows signs of corruption and some editors delete the word (see Hesychius *β* 1084 Schmidt).[10]

Lobeck (1843: 123) to some extent anticipates Wheeler in claiming that adjectives with *-υλο-* are accented on the final syllable if they end in a tribrachic sequence (and therefore accented intermediately only if they have a dactylic termination) and complains on the basis of *βραχυλός* and *παχυλῶς* that Arcadius (64. 11–20) omitted to mention this fact.

(*c*) In addition to the generalizations outlined in (*b*), Vendryes (1904: 169) states that polysyllabic adjectives in *-αλο-* and *-ελο-* are variously accented.

(*d*) Lubotsky (1988: 131–2) assumes recessive accentuation for words with the suffix *-ελο-*.

(*e*) Kuryłowicz (1958: 132) states that primary derivatives in *-ελος*, *-αλον*, and *-ωλον* are accented on the root (i.e. recessive).

(*f*) Bally (1945: 60) claims that nouns with *-λο-* are mostly recessive if the suffix *-λο-* is preceded by a vowel. He does not comment on the accentuation of those nouns with *-λο-* in which the suffix is preceded by a consonant.

[7] Cf. also Kuryłowicz (1958: 131), who states that primary derivatives in *-λος* and *-ωλος* are finally accented.

[8] Lubotsky does not in fact mention those with *-υλο-*. Cf. also Kuryłowicz (1958: 135, 136).

[9] Discussion in Postgate (1925: 222–49).

[10] Latte emends without comment to *βραχύλον* (see Hesychius *β* 1079 Latte).

(*g*) According to Vendryes (1904: 168, quoted at the head of this chapter), the accentuation of nouns in *-λος* follows no rule.

(*h*) Chandler (1881: 77–8) regards the accentuation of nouns ending in *-λος* as mostly recessive, with two classes of exceptions: (i) disyllabic nouns in which *-λος* is preceded by *-λ-*, by a long vowel, or by a diphthong are mostly accented on the final syllable; (ii) nouns in *-ιλος* and *-υλος* usually have intermediate accentuation.

This variety of in part mutually contradictory claims illustrates first and foremost that it is difficult to discern much order in the accentuation of words with *-λο-*. At the risk of adding to the already bewildering number of different attempts to do so, I shall begin by taking a fresh look at the data with a view to determining what, if any, valid generalizations may be made.

9.3.2 Summary of data

A first summary of the data may now be given as in Table 9(c). Recessive accentuation is a possibility for all terminations other than *-βλο-*, *-ειλο-*, *-λλο-*, and *-φλο-*. My data include only one, two, or three words for each of these terminations, and the absence of recessive words here is likely to be accidental. For most terminations, there are also some words that are either finally or intermediately accented. Where we find neither final nor intermediate accentuation (i.e. for *-ολο-*, *-πλο-*, and *-αυλο-*), the total number of words is again very small and the absence of finally or intermediately accented words may be accidental. Final and intermediate accentuation, however, are almost in complementary distribution according to the synchronic termination of the word. With two exceptions (*μεγάλοι* 'big' and *δαψιλός* 'ample'), terminations that form finally accented words do not form intermediately accented ones, and those that form words with intermediate accentuation do not form finally accented ones.

I shall treat the problem of the accentuation of words with *-λο-* as consisting of two separate questions: (*a*) what determines the choice between final and intermediate accentuation (for those words that are non-recessive), and (*b*) how is the choice between recessive and non-recessive (whether final or intermediate) accentuation made?

9.3.3 The choice between final and intermediate accentuation

Intermediate accentuation is confined to words of certain terminations in which a short vowel precedes the suffix *-λο-* (specifically *-αλο-*, *-ιλο-*, *-υλο-*), i.e. terminations that could potentially—but did not necessarily—form words ending in a dactylic sequence of syllables and therefore subject to Wheeler's law if originally accented on the final syllable.

Table 9(c). *Accentuation of words in -λο-, according to synchronic termination*

Termination	Finally accented	Intermediate	Recessive	Uncertain
-αλο-	5 adj., 1 noun	1 adj. (μεγάλοι)	1 adj., 21 nouns	—
-ᾱλο-	1 noun	—	1 noun	—
-βλο-	1 adj.	—	—	—
-ελο-	1 noun	—	1 adj., 3 nouns	2 adj., 2 nouns
-ηλο-	12 adj., 2 nouns	—	5 adj., 7 nouns	1 adj., 1 noun
-ιλο- (including κοῖλος < *kou̯ilos)	1 adj. (δαψιλός)	2 adj., 7 nouns	2 adj. (including κοῖλος), 3 nouns	2 nouns
-ειλο-	1 adj.	—	—	—
-ῑλο-	1 adj.	—	2 nouns	1 noun
-λλο-	1 adj.	—	—	1 adj.
-ολο-	—	—	2 nouns	—
-πλο-	—	—	1 noun	—
-αυλο-	—	—	2 adj., 1 noun	1 adj.
-υλο-	—	9 adj., 4 nouns	1 adj., 5 nouns	1 adj.
-ῡλο-	1 noun	—	4 nouns	—
-φλο-	2 adj.	—	—	1 adj.
-χλο-	1 noun	—	2 nouns	—
-ωλο-	3 adj., 1 noun	—	1 adj., 3 nouns	—

The choice between final and intermediate accentuation, however, is not straightforwardly determined by the presence of a dactylic or a non-dactylic termination. Most of the intermediately accented *-ιλο-* and *-υλο-* words included in the data under consideration end in a dactylic sequence, but two bird names do not: *τροχίλος* 'Egyptian plover' and *φρυγίλος* 'chaffinch'. The only finally accented word with *-ιλο-* or *-υλο-* that is included is in fact *δαψιλός* 'ample, wide', which has a dactylic termination (contrary to the expected outcome of Wheeler's law).[11] The only word that is included and has intermediate accentuation but does not terminate in *-ιλο-* or *-υλο-* is *μεγάλοι* 'big', which does not end in a dactylic sequence.[12] Furthermore, the word *ὀμφαλός* 'navel' ends in a dactylic sequence and yet has final accentuation.[13] If, therefore, we invoke Wheeler's law as an explanation of the intermediate accentuation in forms such as *ἀγκύλος* 'curved', we need to explain why *τροχίλος* 'Egyptian plover', *φρυγίλος* 'chaffinch', and *μεγάλοι* 'big' have intermediate accentuation although they are not dactylic, and why *δαψιλός* 'ample, wide' and *ὀμφαλός* 'navel' have final accentuation although they *are* dactylic.

The final accent of *δαψιλός* 'ample, wide' can perhaps be explained. The word occurs once, in a fragment of Empedocles' verse quoted by Aristotle (*Cael.* $294^{a}26$ = Empedocles fr. B 39. 1 D–K), and is an alternative to the more usual *s*-stem form *δαψιλής* 'ample, wide'. It is possible that the *o*-stem form is the original one, as argued by Solmsen (1913: 461–5), but it appears in any case to have been entirely replaced by the *s*-stem form from the classical period on. By the time an accent was written on *δαψιλός*, the form *δαψιλής* will have been far more familiar. The scribal tradition perhaps assigned final accentuation to *δαψιλός* on the basis of *δαψιλής*, whose accentuation is normal for an *s*-stem adjective.

Wheeler (1885: 104 n. 1) suggests the possibility that for *ὀμφαλός* 'navel' the paradigm resulting from his dactylic retraction law (**ὀμφάλος*, **ὀμφάλον*, *ὀμφαλοῦ*, *ὀμφαλῷ*) was levelled in the direction of the oblique cases rather than generalizing the accentuation of the nominative singular throughout the paradigm. Wheeler justifies this

[11] On *βραχυλός* and **παχυλός*, see pp. 213, 225.

[12] The word *αἰόλος* 'quick-moving, nimble' is excluded from the data considered because its etymology and original segmentation are disputed; it is possible that the *-λ-* belonged to the root (see Frisk 1960–72: i. 42). Given the uncertain origin of *αἰόλος*, we cannot be sure either that the word had a suffix *-λο-* or that it ought originally to have been finally accented. It is at least possible, however, that *αἰόλος* provides an example of Wheeler's law accentuation in a dactylic word terminating in *-ολο-* —and in view of the rarity of intermediate accentuation in Gk nouns and adjectives as a whole, not only possible but rather likely.

[13] The Homeric form of the word for 'bone-marrow', *μῡελός*, corresponds to Attic *μυελός*, and its dactylic structure may well be due only to metrical lengthening (Chantraine 1968–80: 718; Frisk 1960–72: ii. 264).

suggestion by noting that *ὀμφαλός* 'navel', unlike *πατροκτόνος* 'murdering one's father, murderer of his father' (which has the 'Wheeler's law' accentuation of the nominative generalized throughout the paradigm), does not denote an animate being, i.e. one likely to function as an agent and therefore to appear as the subject of a verb in the nominative case. The *-λο-* nouns under consideration that have intermediate accentuation and a dactylic termination all in fact denote animate beings:

πομπίλος 'fish that follows ships'
ποντίλος 'paper nautilus' (a mollusc)
κορυπτίλος 'one that butts with the head'
ναυτίλος 'seaman'
ὀρχίλος a bird
ἰαμβύλος 'libeller'
κηρύλος a fabulous seabird
ἀρκτύλος 'bear's cub'
ἐρωτύλος 'darling'[14]

These words contrast strikingly with the four *recessive* nouns in *-ιλο-* and *-υλο-* that terminate in a dactylic sequence; none of these denotes an animate being:

αἴγιλος 'herb of which goats are fond'
κόνδυλος 'knuckle'
σφόνδυλος 'vertebra; joint'
στέμφυλον 'mass of olives from which the oil has been pressed, olive-cake'

We might have expected the words with *-ιλο-* or *-υλο-* that terminate in a dactylic sequence and do not denote animate beings to be finally accented in accordance with Wheeler's prediction. However, the finding that there is *some* contrast between those words denoting animate beings and those not suggests that Wheeler was right in thinking that whether a word denoted an animate being was in some way relevant to its accentuation.

Given that the dactylic words in *-ιλο-* and *-υλο-* that do not denote animate beings have recessive and not final accentuation, it is noteworthy that *ὀμφαλός* has final accentuation. On the other hand, all dactylic words in *-λο-* that have intermediate accentuation are in *-ιλο-* and *-υλο-*, whereas *ὀμφαλός* is not. Moreover, as we have already seen, two words in *-ιλο-* have intermediate accentuation although they are not

[14] Wheeler (1885: 66) provides his own list of dactylic nouns in *-λο-* with intermediate accentuation, in which there is a preponderance of words for animate beings. I have given my list rather than Wheeler's in order to show all and only the relevant words being considered here.

dactylic: *τροχίλος* 'Egyptian plover' and *φρυγίλος* 'chaffinch'. Allinson (1891: 49, 51–2) relies on these facts in attempting to discredit Wheeler's law, arguing that the nouns and adjectives in *-ίλο-* and *-ύλο-* are diminutives, and that their accentuation is due to a Greek tendency to accent the penultimate syllable in diminutives.

Allinson's explanation is difficult to accept because he has no clear semantic criteria for distinguishing a diminutive from a non-diminutive. While *ἀρκτύλος* 'bear's cub' is clearly diminutive in meaning, the meaning of *ναυτίλος* 'seaman, sailor' is much less obviously diminutive. Moreover, a word such as *ψάκαλον* 'newborn animal' is no less semantically diminutive than *ἀρκτύλος* 'bear's cub'. The notion 'diminutive' can be helpful here only in so far as one might label the complex suffixes *-ιλο-* and *-υλο-* 'diminutive suffixes', even though not all words formed with these suffixes are semantically diminutives, and one might observe that for these suffixes intermediate accentuation occurs whereas final accentuation (except in *δαψιλός*) does not. It is, however, the presence of *-ιλο-* or *-υλο-*, rather than either a dactylic termination *per se* or a diminutive meaning *per se,* that conditions the choice of intermediate rather than final accentuation.

We have noted that the intermediately accented words in *-ιλο-* and *-υλο-* belong to a category for which comparative evidence speaks for original final accentuation (§ 9.2 above). Since most of the relevant words with *-ιλο-* or *-υλο-* end in a dactylic sequence of syllables, the replacement of final by intermediate accentuation is most naturally explained as resulting from Wheeler's law of dactylic retraction. The accentuation of non-dactylic *τροχίλος* 'Egyptian plover' and *φρυγίλος* 'chaffinch', and of dactylic *ὀμφαλός* 'navel', can be explained on the hypothesis that after Wheeler's law ceased to operate phonologically, the accentuation of words with *-λο-* was rearranged into two groups. The words with *-ιλο-* or *-υλο-* all acquired intermediate accentuation (unless they had already become recessive: see below) under the influence of the large proportion of words with *-ιλο-* or *-υλο-* that ended in a dactylic sequence. The remaining words with *-λο-* all acquired final accentuation (unless, again, they had already become recessive) under the influence of those that did not end in a dactylic sequence and had thus retained final accentuation all along. Words in either group might acquire recessive accentuation at some stage, for reasons to be discussed shortly; words that had become recessive were taken out of the competition between final and intermediate accentuation.

The accentuation of *μεγάλοι* 'big' remains to be considered. It has been suggested that this word was originally a diminutive (Schwyzer 1953: 484; Risch 1974: 107 n. 93). However, I have argued that the intermediate accentuation of words in *-ιλο-* and *-υλο-* does not depend on their having diminutive meaning but on their containing the

sequences *-ιλο-* and *-υλο-*. Furthermore, although the extension of intermediate accentuation to the non-dactylic words *τροχίλος* 'Egyptian plover' and *φρυγίλος* 'chaffinch' is relatively unsurprising given the large group of dactylic *-ιλο-* and *-υλο-* words displaying intermediate accentuation, the extension of Wheeler's law accentuation to *μεγάλοι* would seem incredible given the complete absence of intermediately accented dactylic words with *-αλο-*.

An explanation given (very briefly) by Schwyzer (1953: 584 n. 1) seems preferable. The stem *μεγαλο-* 'big' stands in a suppletive relationship to *μεγα-* 'big'. The suppletive paradigm is as shown in Table 9(d). In all forms built on the stem *μεγαλο-* except for the nominatives plural masculine and feminine and the nominative-accusative plural neuter (and the form *μεγάλε* of the voc. sg. m., post-classical if spurious at Aeschylus, *Th.* 822), the position for recessive accentuation coincides with the syllable *-γα-*. Now let us suppose that at some stage the forms built on the stem *μεγαλο-* were assigned recessive accentuation (perhaps to bring them in line with the forms *μέγας*, *μέγαν*, *μέγα*).[15]

Table 9(d). *Paradigm of μέγας, μεγάλη, μέγα 'big'*

	Masculine	Feminine	Neuter
Singular			
Nom.	*μέγας*	*μεγάλη*	*μέγα*
Voc.	*μέγας* (also *μεγάλε*)	*μεγάλη*	*μέγα*
Acc.	*μέγαν*	*μεγάλην*	*μέγα*
Gen.	*μεγάλου*	*μεγάλης*	*μεγάλου*
Dat.	*μεγάλῳ*	*μεγάλῃ*	*μεγάλῳ*
Dual			
Nom./Voc./Acc.	*μεγάλω*	*μεγάλᾱ*	*μεγάλω*
Gen./Dat.	*μεγάλοιν*	*μεγάλαιν*	*μεγάλοιν*
Plural			
Nom./Voc.	*μεγάλοι*	*μεγάλαι*	*μεγάλα*
Acc.	*μεγάλους*	*μεγάλᾱς*	*μεγάλα*
Gen.	*μεγάλων*	*μεγάλων*	*μεγάλων*
Dat.	*μεγάλοις*	*μεγάλαις*	*μεγάλοις*

[15] Meißner (1995: 72) identifies an adjectival Caland suffix **-H_2-* that he regards as the source of the *-α* in *μέγα* (corresponding to Skt *máhi*). The stem *μεγαλο-* is regarded as a complex Caland formation, with one Caland adjective suffix added after another. In Ch. 12 I postulate inherited root accentuation for such complex Caland formations. If Meißner's analysis of the stem *μεγαλο-* and my conclusions regarding the accentuation of complex Caland formations are correct, recessive accentuation may be original for the

The paradigm would now have included the forms *μέγαλοι, *μέγαλαι, *μέγαλα. Paradigmatic pressure, however, resulted in the generalization of the accent on the syllable -γα-. A crucial factor in this paradigm levelling must be the absence of forms on the stem μεγαλο- in the nominative and accusative singular masculine or neuter, since recessive paradigms in which these cases are neither missing nor built on another stem have not acquired intermediate accentuation throughout. Thus, ἄνθρωπος 'person' was not replaced by *ἀνθρῶπος under the influence of ἀνθρώπου etc.; on the contrary, the existence of the nom. sg. ἄνθρωπος and acc. sg. ἄνθρωπον was sufficient to protect the nom. pl. ἄνθρωποι from being replaced by *ἀνθρῶποι.

It is thus neither necessary nor desirable to resort to Wheeler's law as an explanation for the accentuation of μεγάλοι 'big'. When Wheeler's law ceased to operate phonologically, Wheeler's law accentuation was eliminated for words in -αλο- and -ελο- (on -ολο- see n. 12 above). For -ιλο- and -υλο- words, on the other hand, Wheeler's law accentuation survived and was even generalized to non-dactylic words. The accentuation of the two aberrant words δαψιλός 'ample, wide' and μεγάλοι 'big' has nothing to do with Wheeler's law.

9.3.4 The choice between recessive and non-recessive accentuation

Various factors influence the choice between recessive and non-recessive accentuation. Polysyllabic words in -ιλο- and -υλο- most often have intermediate accentuation, although the incidence of recessive accentuation is greater for nouns than for adjectives (see Table 9(e)). The two recessive adjectives are ξύσιλος 'shaven, smooth' and νότυλος 'moist(?)', both of which are *hapax legomena*. It appears, then, that intermediate accentuation was normal for adjectives in -ιλο- and -υλο-; the only exceptions are two very poorly attested words.

We have already noted that for dactylic nouns in -ιλο- and -υλο- there is an absolute correspondence between intermediate accentuation and denoting an animate being, and conversely between recessive

Table 9(e). *Accentuation of polysyllabic adjectives and nouns in -ιλο-/-υλο- (except for δαψιλός 'ample, wide')*

	Adjectives	Nouns
Intermediate	11	11
Recessive	2	5

forms built on the stem μεγαλο-. On the other hand, it is not clear how seriously -λο- should be taken as a Caland suffix.

accentuation and not denoting an animate being. When non-dactylic polysyllabic nouns with *-ιλο-* and *-υλο-* are added, this picture is hardly altered. There are three such words, all denoting animate beings; two of these have intermediate accentuation:

τροχίλος 'Egyptian plover'

φρυγίλος 'chaffinch'

φάγιλος 'lamb'

Among the words with known accentuation and terminations other than *-ιλο-* and *-υλο-*,[16] the majority of nouns (46 out of 54 words, or 85%) is recessive, while a (slighter) majority of the adjectives is finally accented (25 out of 34 words, or 74%). For the nouns with terminations other than *-ιλο-* and *-υλο-*, the 8 finally accented words all fall in the frequency range 1–100, counting occurrences in the Perseus corpus (Crane 1999), as shown in Table 9(f) and Charts 9(a) and 9(b). The absence of finally accented words in the very high frequency range could easily be accidental, given the small number of words with very high text frequencies. However, the absence of finally accented words not occurring at all in the Perseus corpus (Crane 1999) is striking, since the number of *recessive* words with no occurrences is relatively high. It is clear that the pattern seen here is different from that observed for nouns with *-ρο-*, *-το-*, and *-νο-* (Charts 6(b), 7(c), and 8(c)). The most striking difference, given the usual paucity of very high frequency words, is that for the *-λο-* nouns not in *-ιλο-* or *-υλο-* the proportion of finally accented words increases dramatically instead of decreasing when we move from the very low frequency words to those of medium frequency.

For the *-λο-* *adjectives* with terminations other than *-ιλο-* and *-υλο-*, no particular relationship between frequency and accentuation can be determined.[17]

[16] For this count I exclude disyllabic as well as polysyllabic words in *-ιλο-* and *-υλο-*, and words with an *i-* or *u*-diphthong preceding *-λο-*. Words in *-ῑλο-* and *-ῡλο-* are, however, included.

[17] Excluding adjectives with an *i-* or *u*-diphthong in the penultimate syllable, and excluding *μεγάλοι*, the figures are as follows. Among the words with no occurrences in the Perseus corpus (Crane 1999), 7 are finally accented (78%) and 2 recessive (22%). Among those occurring between 1 and 100 times, 14 are finally accented (74%) and 5 recessive (26%). Among those occurring over 100 times, 4 are finally accented (80%) and 1 is recessive (20%). To the extent that there is a distribution here, it has the same shape as that already noted for *nouns* with *-ρο-*, *-το-*, and *-νο-* (Charts 6(b), 7(c), and 8(c)): the words at the top and bottom of the frequency range are more likely to be finally accented than those in the middle. Such a distribution would fit with the conclusion I shall eventually come to (pp. 236–7, 293) that adjectives with *-λο-* as we know them had undergone some of the same processes as nouns with our other suffixes, while the *-λο-* nouns had progressed beyond the stage of development seen in the nouns with *-ρο-*, *-το-*, and *-νο-*. However, the differences in proportions of finally and recessively accented

Table 9(f). *Frequencies of nouns with suffix -λο- (per* c.*3,400,000 words) excluding -ιλο-, -υλο-*

Occurrences in corpus	Finally accented words	Recessive words
0	0 words	18 words *κρέμβαλα* 'castanets' *σκάνδαλον* 'trap laid for an enemy' *ἄρδαλος* 'one who does not live purely' *νεκύδαλ(λ)ος unidentified insect* *ψάκαλον/ψάκαλος* 'new born animal' *δάμαλος* 'calf (?)' *τρόχμαλος* 'rolled stone, pebble' *φῦσαλος kind of toad* *γνάφαλος unkown bird* *δρύψελον* 'flake' *στράβηλος* 'snail, shell-fish; wild olive' *κορύμβηλος* 'white-berried ivy' *ἄρκηλος animal exhibited by Ptolemy II* *βδόλος* 'stench' *ψόλος* 'soot, smoke' *θρῦλος* 'murmur' *ἔδωλον* 'seat, abode' *φάσκωλος* 'leathern bag, wallet'
1–100	8 words *δᾱλός* 'firebrand' (27) *ὀμφαλός* 'navel' (36) *μυελός/μῡελός* 'bone marrow' (28) *βηλός* 'threshold' (4) *χηλός* 'large chest, coffer' (9) *χῡλός* 'juice' (3) *μοχλός* 'bar, lever' (39)	22 words *κύμβαλον* 'cymbal' (4) *ἀστράγαλος* 'vertebra' (28) *κνώδαλον* 'wild creature' (16) *αἴθαλος* 'smoky flame, thick smoke' (2) *ἠπίαλος* 'ague' (1) *κᾶλον* 'wood' (5) *ῥόπαλον* 'club, cudgel' (34) *πάσσαλος* 'peg' (18)

adjectives with *-λο-* between the different frequency categories are too small for any confidence in this conclusion to be based on these differences.

Table 9(f). (*Cont'd*)

Occurrences in corpus	Finally accented words	Recessive words
	φειδωλός 'niggard, miser' (7)	*πέταλον* 'leaf' (19) *κρόταλον* 'clapper' (11) *σκύταλον* 'club, cudgel' (6) *γύαλον* 'hollow' (28) *σκόπελος* 'look-out place, peak' (30) *πύελος*/*πύαλος* 'trough' (8) *ζῆλος* 'jealousy' (59) *δείκηλον*/*δείκελον* 'representation' (1) *πέτηλον* 'leaf' (1) *τράχηλος* 'neck, throat' (44) *πέδῑλον* 'sandal' (39) *σκῦλον* 'spoils' (30) *στῦλος* 'pillar' (7) *κόχλος shellfish with a spiral shell* (6)
101–200	0 words	3 words *ὅμῑλος* 'assembled crowd' (153) *φῦλον* 'race, tribe' (110) *εἴδωλον* 'phantom' (116)
201–300	0 words	2 words *διδάσκαλος* 'teacher' (261) *ὄχλος* 'crowd' (293)
301–400	0 words	0 words
401–500	0 words	0 words
> 500	0 words	1 word *ὅπλον* 'tool'

9.4 Evaluation of previous claims and summary of results

We are now in a position to evaluate the various claims that have been made about the accentuation of words with *-λο-*. Wheeler's (1885: 61–6) claim that adjectives with *-λο-* are generally accented on the final syllable if they do not end in a dactylic sequence, intermediately

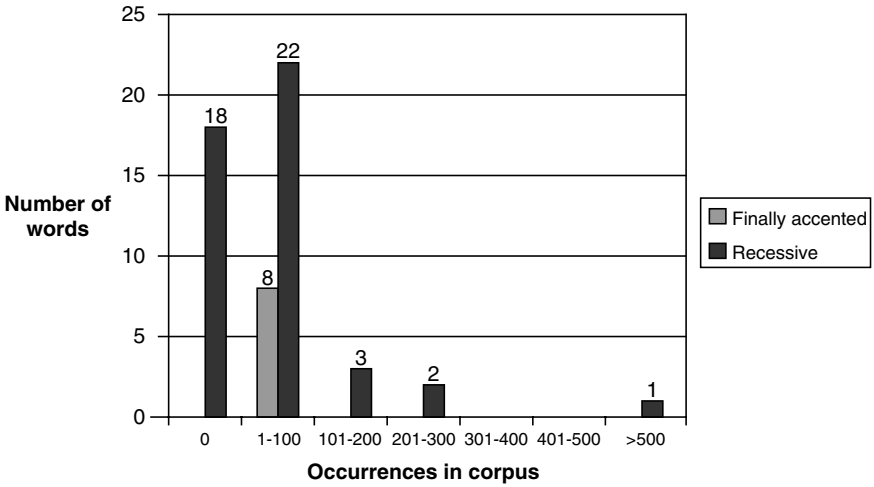

Chart 9(a). Nouns with suffix -λο- (not -ιλο-, -υλο-) (absolute numbers)

accented if they do, is approximately correct, but it misses the synchronically most essential fact about the distribution of accent patterns among adjectives in -λο-: that intermediate accentuation is confined to words with -ιλο- or -υλο-, while final accentuation appears only where the

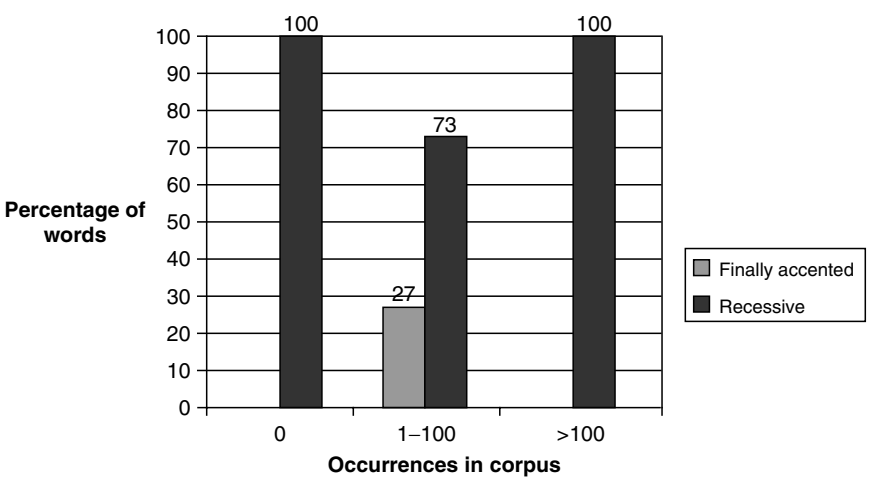

Chart 9(b). Nouns with suffix -λο- (not -ιλο-, -υλο-) (percentages)

termination is something other than -ιλο- or -υλο-. The two exceptions to this generalization included in the data here considered, δαψιλός 'wide, ample' and μεγάλοι 'big', have idiosyncratic explanations and do not, in any case, support Wheeler's analysis. One further exception (on which see n. 12 above), αἰόλος 'quick-moving, nimble', supports Wheeler's analysis but is of uncertain structure and synchronically isolated.

Chandler (1881: 120–1), Vendryes (1904: 169), Postgate (1924: 49–50), Bally (1945: 72), and Lubotsky (1988: 131), who state that adjectives with -λο- are mostly accented on the final syllable but those with -ιλο- or -υλο- have intermediate accentuation, describe the synchronic situation accurately. Historically, the split between the accentuation of adjectives with -ιλο- or -υλο- (most of which end in a dactylic sequence), on the one hand, and other adjectives with -λο- (most of which do not end in a dactylic sequence), on the other, is likely to have arisen out of a split originally due to Wheeler's law and conditioned by the presence or absence of a dactylic termination. But the situation resulting from Wheeler's law was morphologized and the conditioning factor became a morphological instead of a phonological one—the presence of a complex suffix -ιλο- or -υλο- instead of the presence of a dactylic termination.

As noted above (p. 213), the often-quoted example of a tribrachic adjective in -υλο- with final accentuation, *παχυλός, is not attested except in the adverbial form παχυλῶς (Aristotle, *EN* 1094^{b}20). If the lack of attestations of the adjective itself is not an accident, the final accent may owe less to the tribrachic form of the word than to the nonexistence of the adjective. The bird names τροχίλος 'Egyptian plover' and φρυγίλος 'chaffinch' suggest that words in -ιλο-, at least, replaced final with intermediate accentuation even if they were tribrachic, by analogy with dactylic words in -ιλο-. If this was true also for tribrachic words in -υλο- (for which there are no cogent data other than παχυλῶς), the analogical extension of intermediate accentuation may have been blocked in the case of a word for which there was no noun or adjective in -υλος but only an adverb in -υλως.

The adjective βραχυλός 'small' has even less claim than παχυλῶς to be treated as a serious example of a finally accented tribrachic adjective in -υλο-. The word is attested only as a doubtful reading in Hesychius, whose manuscript cannot in any case be trusted as regards accentuation (see p. 213 with n. 10; p. 4). Far from making an oversight in not mentioning the final accent of tribrachic adjectives in -υλο- (cf. Lobeck 1843: 123), the ancient grammarians accurately described the situation as one in which words in -υλο- had either intermediate or recessive accentuation.

Chandler's account of the accentuation of nouns ending in -λος comes closer to describing accurately the accentuation of nouns in which -λο- is a suffix than any of the various other statements concerning the

accentuation of nouns in -λο- (§ 9.3.1 above). Nouns with -λο- are indeed usually recessive, except that those with -ιλο- and -υλο- most often have intermediate accentuation.

Other than those with -ιλο- and -υλο-, non-recessive nouns with -λο- are finally accented, and none of those considered is so infrequent as not to be represented at all in the Perseus corpus (Crane 1999). To make the second part of this observation differently, when words with -ιλο- and -υλο- are excluded from consideration all the nouns with -λο- that do not occur at all in the Perseus corpus are recessive. All nouns with -λο-, again excluding -ιλο- and -υλο-, that occur over a hundred times are also recessive, but since there are only six words in this group the lack of finally accented nouns occurring over a hundred times could easily be accidental.

For nouns in -ιλο- and -υλο- the situation is different. Among words long enough for intermediate and recessive accentuation to be distinguishable, non-recessive words are intermediately accented and intermediate is more common than recessive accentuation even for the least frequently occurring words. The decisive factor in the accentuation of a word with -ιλο- or -υλο- is not frequency but whether the word denotes an animate being. With the exception of φάγιλος 'lamb', nouns with -ιλο- or -υλο- that denote animate beings have intermediate accentuation whereas the others are recessive.

Two things may help us to arrive at an explanation for the split between recessive and non-recessive accentuation in adjectives and nouns with -λο-. Firstly, words with -ιλο- or -υλο- apart, we have once again noticed a certain relationship between word frequency and accentuation for the nouns. The situation for nouns with -λο- is, however, importantly different from that for nouns with -ρο-, -νο-, and -το-, in that very low frequency nouns with -λο- show no preference for final accentuation but are, on the contrary, consistently recessive. Very high frequency nouns with -λο- were also found to be consistently recessive, but given the paucity of data for very high frequency nouns with -λο-, and the strong preference for recessive accentuation among -λο- nouns of *any* frequency, it is at least a possibility that we have here simply an accident of insufficient data. Secondly, we found that nouns in -ιλο- and -υλο- were split according to a semantic criterion. With one exception, those denoting animate beings had intermediate accentuation while others were recessive. Such a semantic division may provide valuable evidence as to how the split in accentuation arose historically and how it was maintained synchronically. We shall return to both of these issues in the next chapter, which draws together observations made regarding words with -ρο-, -το-, and -νο- as well as -λο-.

10 PRELIMINARY CONCLUSIONS

10.1. Introduction

In the preceding chapters, we have observed that the accentuation of nouns with suffixes *-ρο-*, *-το-*, *-νο-*, and *-λο-* stands in some relationship to their text frequency. No absolute rule can be formulated for the accentuation of words within a particular frequency range, but some statistical generalizations can be made.

For nouns with *-ρο-*, *-το-*, and *-νο-*, both very high frequency and very low frequency words are less likely to be recessive than those of medium frequency. On the other hand, certain sub-classes of the above categories show consistent recessive accentuation, regardless of frequency. Specifically, nouns with *-το-* whose stem is a simple *o*-grade verbal root (*φόρτος* 'load') or a disyllabic verbal root in CVRV form (*θάνατος* 'death') are recessive, as are neuter nouns in *-ανο-* (*δρέπανον* 'sickle'). The observed relationships between frequency and accentuation apply where such factors do not intervene.

Since the accentual behaviour of words with *-λο-* is rather different from that of words with *-ρο-*, *-το-*, and *-νο-*, I postpone discussion of words with *-λο-* until after considering those with *-ρο-*, *-το-*, and *-νο-*.

10.2 Nouns with suffixes *-ρο-*, *-το-*, and *-νο-*

The existence of some relationship between accentuation and text frequency should provide a clue to the kind of answer that might be appropriate for the question posed in Chapter 5: how should one explain diversity in accentuation between different words apparently formed with the same suffix? Specifically, we require an explanation that can account for the observed interaction between accentuation and frequency.

Effects of text (or, more generally, token) frequency have long been observed in various types of historical process, in particular in those traditionally regarded as morphological ('analogy') and in at least some of those traditionally regarded as phonological ('sound change'). It has long been noticed that morphological change affects infrequent items first[1] while at least some sound changes proceed word by word (lexical

[1] So e.g. Paul (1909: 111); Hooper (1976); Bybee (1985: 119–21).

diffusion) and affect frequent items first.[2] More recently, Phillips (1984; 1994) has collected evidence to show that some lexically diffused sound changes affect infrequent items before frequent items, like morphological change. In particular, she finds (1984) that changes whose motivation is non-physiological, whether traditionally regarded as 'morphological' or 'phonological' changes, tend to affect infrequent items first, while physiologically motivated changes (for example, assimilations) tend to affect frequent items first. In addition, she argues (1998*a*; 2001) that changes which require a word to be analysed in terms of component parts or grammatical information[3] tend to affect infrequent items first whereas changes not requiring detailed analysis[4] tend to affect frequent items first. The observation that frequency affects some phonological or morphological changes in the opposite direction from others suggests that (at least) two fundamentally different mechanisms of change are involved (so Phillips 1998*b*). The distinction between the two may not correspond exactly to the distinction between 'sound change' and 'analogy', a distinction that is in any case becoming increasingly difficult to maintain in a rigorous way along the traditional lines (see Kiparsky 1995, although see also Phillips 1998*b*).

Frequency effects, where found, suggest that there has been a historical change whose progress was in some way sensitive to frequency. It is therefore likely that our nouns in *-ρο-*, *-το-*, and *-νο-* were at some stage more uniform in their accentuation, being either generally accented on the final syllable or generally recessive within each category defined by suffix.

For three sub-groups, text frequency was not found to be relevant: nouns consisting of an *o*-grade root plus *-το-* (*φόρτος* 'load'), nouns consisting of CVRV-type root plus *-το-* (*θάνατος* 'death'), and neuter nouns in *-ανο-* (*δρέπανον* 'sickle'). These sub-groups constitute possible exceptions to the processes suggested here and will be discussed separately (§ 10.2.1 below). For the remaining words, for which accentuation interacts with text frequency, it is likely that this interaction is the result

[2] So Schuchardt (1885: 24–9); Fidelholtz (1975, concerned with synchronic phonological alternations in which frequency appears to be a conditioning factor rather than with change as such); Hooper (1976); Phillips (1980, primarily demonstrating the involvement of frequency in a case of synchronic phonological variation); Labov (1994: 483, 433 n. 9, 506–7, 530 n. 18).

[3] For example, the development of new English noun–verb pairs with contrasting stress such as *pérmit* versus *permít*, from earlier non-alternating *permít*, a change requiring analysis by part of speech.

[4] For example, the shift in stress in English verbs in *-ate* (from the first to the last syllable in the case of disyllabic verbs such as *dictate*, and from the penultimate to the first syllable in the case of trisyllabic verbs such as *contemplate*), which Phillips (1998*a*: 229–30) argues is related to the loss of analysis of *-ate* as a suffix especially in more frequent words.

of a historical process. Such a process would involve a change of accentuation in some words from recessive to final or vice versa.

The changes do not have the appearance of physiologically motivated changes. They involve a well-defined and discrete shift from recessive to final accentuation or vice versa, not a gradual shift of the accent towards the beginning or end of the word as one might expect to occur if the motivation lay in articulatory timing effects. The total absence of *intermediate* accentuation among our words in *-ρο-*, *-το-*, and *-νο-*, with the sole exception of *καρκίνος* 'crab' (on which see p. 202 with n. 11), helps to confirm that our words have not changed from final to recessive accentuation, or vice versa, by any such gradual process. If they had, and given that the changes involved have evidently not run to completion, we might expect some words to have shifted their accentuation only as far as the intermediate accent position. Furthermore, the changes exhibit clear morphological conditioning: they are specific to words with certain suffixes, they do not operate to the same degree for each of these suffixes, and nouns appear to be treated differently from adjectives. Given the above-mentioned results of work on frequency effects in linguistic change, these facts suggest that our changes ought to have affected the most frequent items first, rather than the least frequent.

So far, I have avoided asserting that the changes in question replaced final accentuation with recessive accentuation or that the opposite was the case. The observed patterns of accentuation overwhelmingly suggest, however, that for all three suffixes change has been from final to recessive accentuation. Firstly, each of the three sets of nouns exists beside a set of adjectives with almost consistent final accentuation. Unless this pattern is purely coincidental in every case, it is likely that the adjectives have simply retained the original accentuation associated with the suffix. Change resulting in an accentual split in these categories has been almost entirely confined to the nouns, some of which would have lost the original final accentuation of the category and become recessive. Given the evidence assembled in Chapter 5 that recessive accentuation was treated as the most generally regular, or 'default', accentuation pattern for Greek, it would also be unsurprising to find that change repeatedly takes the direction of replacing non-recessive with recessive accentuation.

We can, incidentally, now revisit a question left unanswered earlier (p. 165). Why are the masculine kinship terms *γαμβρός* 'brother-in-law, son-in-law', *ἑκυρός* 'father-in-law', and *πενθερός* 'father-in-law' all finally accented? The hypothesis that the shape of the accentual split in nouns with *-ρο-* is to be explained as the result of some of these nouns having changed from final to recessive accentuation entails that nouns with *-ρο-* were regularly accented on the final syllable at an early stage of

Greek. There may have been odd exceptions (perhaps including δῶρον 'gift': see pp. 158, 163), but in general we must assume inherited or at least early final accentuation for Greek -ρο- nouns as well as adjectives. For γαμβρός, inherited final accentuation is suggested independently by the final accent of Skt *jārá-* m. 'suitor, lover', if this word is connected (but see Table 6(a) note l). In the case of πενθερός, we noted (pp. 164–5) that the absence of Wheeler's law accentuation has been taken as evidence that the word was accented by analogy with other masculine kinship terms. However, words with the suffix -ρο- never show the effect of Wheeler's law: intermediate accentuation was eliminated among words in -ρο- after Wheeler's law was lost as a synchronic rule. There is therefore nothing unexpected about the accentuation of πενθερός, and the hypothesis of a special analogy with other masculine kinship terms is again unnecessary. For ἑκυρός, we noted that the final accent of the Greek form conflicts with the root accent found in Skt *śváśura-* m. 'father-in-law' and implied for proto-Germanic by Old High German *swehur* and Old English *swéor* 'father-in-law'. Traditionally, root accentuation is assumed to be original because it is attested in two branches of Indo-European rather than only one. The hypothesis suggested here makes it worth contemplating the accentuation of the Lithuanian form *šẽšuras* 'father-in-law'; on Illich-Svitych's account of Balto-Slavonic accentuation the third accent paradigm, to which this word belongs, is the regular Lithuanian correspondence for the final accent found in the Greek form (Illich-Svitych 1979: 31). On the other hand, this accentuation pattern is productive in Lithuanian and the correspondence with Greek could also be accidental. Furthermore, we shall see in Chapter 12 some evidence to suggest that Indo-European had some root-accented adjectives in *-u-ro-*, and it is conceivable (especially if one could see in ἑκυρός an original *adjective*) that the word for 'father-in-law' was root-accented at an early stage, probably not as a 'proper' member of this old class of root-accented adjectives but at least under their influence (see p. 286). If so Greek, which did not retain a productive category of recessive words in *-u-ro-*, could have replaced this old root accentuation by the final accentuation that was regular both for adjectives with -ρο- and, at an early stage, for -ρο- nouns. It would be impossible to prove that other masculine kinship terms were not part of the motivation for such an analogical re-accentuation, but this hypothesis again seems unnecessary given the evidence for final accentuation as the regular early accentuation for Greek words with -ρο-.

To return to -ρο- nouns as a whole, the observations made above about the type of change involved (morphological in nature, not physiologically motivated), together with those about the likely direction of change (from final to recessive accentuation), may help in the interpretation of the observed frequency patterns. The evidence that high

frequency words are particularly prone to final accentuation suggests that these high frequency words have tended to resist change; such a conclusion is to be expected given the likely non-physiological origins of the changes. However, very *low* frequency appears to have an effect on accentuation similar to that of very high frequency: nouns with *-ρο-*, *-το-*, and *-νο-* are especially prone to final accentuation at both ends of the frequency range. The reason for this pattern is likely to be related to the reason for another observation, namely that *adjectives* with *-ρο-*, *-το-*, and *-νο-* did not undergo change to recessive accentuation to anything like the same degree as the nouns.

The accentual stability of the adjectives with these suffixes has, I think, to do with their productivity and semantic predictability. In the internal history of Greek, and with one important class of exceptions, new words created with *-ρο-*, *-το-*, or *-νο-* were usually adjectives. This is particularly clear in the case of *-το-*, which was highly productive throughout the history of the language (see Buck and Petersen 1945: 469–70). Moreover, where adjectives formed with these suffixes were synchronically transparent their meaning was generally predictable: an adjective with *-το-* was normally formed from a verbal root and was a verbal adjective with passive sense. Thus *πλεκτός* was analysed as a derivative of *πλέκω* 'plait', and its meaning 'plaited' was predictable. The suffixes *-ρο-* and *-νο-* formed adjectives whose meaning was 'to do with X', where X was the object or action denoted by the base word. Thus *λῡπηρός*, analysed as a derivative of *λύπη* 'physical pain', has a predictable meaning 'to do with pain'. This meaning is rather vague: 'to do with pain', as applied to persons, could be interpreted as 'suffering pain' or 'causing pain'. In fact, both uses are attested although 'causing pain' is the more usual (see LSJ s.v.). Other adjectives in *-ρο-* are often attested with a similar range of interpretations. The semantics of transparent adjectives in *-νο-* are similar again. The word *ὀρεινός* (< **ὀρεσ-νός*), transparently a derivative of *ὄρος*, *τό* 'mountain', basically means 'to do with mountains', but in specific contexts can mean 'mountainous', 'of the mountains', 'from the mountains' or 'dwelling on the mountains' (LSJ s.v.).

Nouns formed with all these suffixes are far less semantically predictable, even when etymologically transparent. Thus *στρατός*, built on the root of *στόρνῡμι* 'spread', can mean only 'army' or 'host'. These specific meanings, while related at least historically to the meaning of *στόρνῡμι*,[5] cannot be predicted from the meaning of the verbal root combined with that of the suffix *-το-*. The same can be said for nouns in *-ρο-* and *-νο-*; compare *κόμαρος* 'strawberry-tree', derived from *κόμη*

[5] For an analysis of the relationship between the meaning of *στρατός* and that of *στόρνῡμι*, see Beekes (1969: 280–1).

'hair, foliage', and *ἀγρηνόν* 'net, netlike woollen robe worn by soothsayers', derived from *ἄγρᾱ* 'the hunt; prey' or the verb *ἀγρέω* 'take, seize'. There was thus a set of adjectives in *-ρο-* whose meaning was more or less compositional, and a set of nouns with *-ρο-* whose meaning was not compositional at all. The same is true for adjectives and nouns with *-το-* and *-νο-*.

The suffix *-ρο-* was probably only slightly, if at all, productive for forming adjectives for most of the attested history of Greek (Chantraine 1933: 223–4). The suffix *-το-* was clearly very productive for forming adjectives, and *-νο-* was productive for adjectives in some complex forms (e.g. *-ϵινο-*: see Buck and Petersen 1945: 262). But the crucial fact is that all these classes of adjectives displayed semantically coherent relationships between base form and derivative; they *appeared* like derivational classes, even at a time when the actual formation of new words with *-ρο-* did not occur on a regular basis. The classes of nouns with these suffixes did not have this property.

Where one can see how a noun in *-ρο-*, *-το-*, or *-νο-* was created within Greek, the mechanism was simply that of taking an adjective and using it as a noun.[6] At first, the adjective might be understood as modifying an implicit noun (e.g. *ἐχθρός* 'enemy' might have been understood as equivalent to *ἐχθρὸς ἀνήρ* 'hateful man'), but with time the noun could be forgotten and the adjective become a true noun, with an idiosyncratic meaning that depended on the once understood noun. A good number of nouns with our suffixes exist beside adjectives that are either identical or identical apart from a difference of accent. Thus, *ἐχθρός* 'enemy' exists beside *ἐχθρός* 'hateful'; *γῦρος* 'circle' exists beside *γῡρός* 'rounded'.

The pattern according to which the accentuation of a noun differs from that of an otherwise formally identical adjective has been taken as evidence for an Indo-European or Greek pattern of deriving a noun from an adjective by shifting its accent, or for periods of catastrophic change during which derivatives with primary functions were accentually differentiated from those with secondary functions (pp. 151–3). But at least for words with our suffixes these assumptions are not necessary. The suffixes *-ρο-*, *-νο-*, and *-το-* can be regarded as inherently adjectival; the quality 'adjective' is part of their meaning or function. But adjectives can become nouns, and in Greek they commonly do so. If a word whose suffix is inherently adjectival becomes a noun, its suffix becomes functionally irrelevant. When such a change of function occurs, I suspect that a word ceases to be treated synchronically as a

[6] Although it cannot be proven, it is widely assumed that this procedure operated already in IE, and therefore that words with these suffixes that were clearly inherited as nouns were ultimately adjectives. Meißner (1995: 68), for example, says of the noun *τέκνον* 'child' that it 'would be a nominalised verbal adjective "the born one" . . . '.

derivative, being treated instead as an unanalysed whole.[7] Under these circumstances, a word may, but need not, lose a non-recessive accent that it had by virtue of containing an inherently accented derivational suffix (now functionally irrelevant) and replace it with recessive accentuation, the most generally regular or 'default' accent pattern for the language. Whether a word in fact loses its original accent or not is related to its frequency. Thus, the difference in accentuation between *ἐχθρός* 'enemy' and *γῦρος* 'circle' does not indicate any fundamental difference in the way each was created. Both are substantivized adjectives, but *ἐχθρός* 'enemy' happens to have retained its original accent. This conservative behaviour, or resistance to accentual regularization after the loss of synchronic analysis as containing an inherently accented suffix, is unsurprising given the word's very high frequency.

But let us now return to the effect of very low frequency on accentuation. Very low frequency words were found to be particularly prone to final accentuation, like very high frequency words, yet nothing said so far would seem to predict such a result. I have argued, however, that a word must cease to be analysed as containing an inherently accented adjectival suffix before it can be allowed to replace its final accent with a 'default' recessive accent. Bybee (1985: 124) claims that 'low-frequency items are analyzed and understood in terms of other items, while high-frequency words, complex or not, may be autonomous, and processed unanalyzed'. The effect of very low frequency on accentuation becomes explicable in terms of this claim. If a low frequency word is understood in terms of other items then it may not lose its status as a complex form and its derivational suffix will retain its synchronic identity. Thus, we might say that adjectives that have become nouns have normally been 'demorphologized'. But the process of 'demorphologization' is blocked by very low token frequency. Somebody who came across the very rare word *σπαρακτόν* would be likely to interpret it with reference to the associated verb *σπαράσσω* 'tear, rend' as 'torn up matter', and therefore in context 'rubble'. Given the rarity of the word, analysis may be necessary before interpretation is possible.

10.2.1 Nouns of types *φόρτος* 'load', *θάνατος* 'death', and *δρέπανον* 'sickle'

Nouns of the types represented by *φόρτος* 'load', *θάνατος* 'death', and *δρέπανον* 'sickle' were found to have consistent recessive accentuation,

[7] I deliberately say 'unanalysed' rather than 'unanalysable' because speakers' tendency not to make use of a certain analysis of a word in speech processing need not imply that they are incapable of making such an analysis. The relatively new pronunciation of English *kilometre* with stress on the second syllable implies a tendency not to analyse the word as a compound of parallel structure to e.g. *centimetre*; but educated speakers are perfectly capable of explaining the structure of the word.

regardless of their text frequency. The consistent recessive accentuation of words of type *φόρτος*, combined with the non-appearance of their root shape among adjectives with *-το-*, suggests that we have here a category of words that are originally nouns and originally root-accented. The same can be said, if with less confidence owing to the paucity of data, for the type of *θάνατος*. The origins of the neuter nouns represented by *δρέπανον* are unclear but words of this category seem to have become productive as nouns with recessive accentuation (cf. pp. 198–9). In each case the consistent recessive accentuation is best explained as the original accentuation assigned to words of the category.[8]

The question how to analyse the root vocalism of *θάνατος* 'death' and *κάματος* 'toil' naturally arises. There is a already a large literature on the subject and this is not the place for yet another treatment. However, three of the theories that have appeared are of particular interest. On one view, recently represented by Rix (1992: 73–4), *θάνατος* and *κάματος* are taken to have disyllabic reflexes of zero-grade laryngeal-final roots *$*d^h\underset{\circ}{n}H_2$(-to-)* and *$*\hat{k}\underset{\circ}{m}H_2$(-to-)*, with the accent on the root conditioning the disyllabic reflex (see p. 187). It is not, however, satisfactorily explained how and when the accent came to fall on the root of such formations (cf. Specht 1932: 115). Given that a zero-grade root is reconstructed, an accent on the suffix *-to-* is implied for Indo-European.[9] The accent would have had to shift onto the root in Greek at a stage before *CRHC sequences split into CRV̄C and CVRVC sequences (cf. *θνητός* < *θνᾱτός* 'mortal' versus *θάνατος* 'death'). A shift of the accent onto the root could, of course, be motivated by the general tendency of nouns with *-το-* to acquire recessive accentuation over time, but this change of accent would have had to occur at an extremely archaic period.

Waanders (1974) and independently Beekes (1975: 11) have derived *θάνατος* and *κάματος* from *$*d^h\underset{\circ}{n}H_2$etos* and *$*\hat{k}mH_2$etos* respectively, and have been followed by a number of scholars.[10] However, we have seen that Greek nouns with *-ετο-* are in general much more prone to final than to recessive accentuation (pp. 188–9). In this respect nouns with *-ετο-* behave just like other Greek nouns with *-το-* apart from the type of *φόρτος* (and of course the 'type' consisting of *θάνατος* and *κάματος* themselves). It would therefore be somewhat surprising if our two nouns *θάνατος* and *κάματος*, while ultimately having the same structure as *νιφετός* 'falling snow, snowstorm', both happened to display an

[8] This can be true for nouns of type *δρέπανον* even if the category originated with some substantivized adjectives in *-ανο-*, as long as the starting-point for the independently productive category was (for whatever reason) recessive.

[9] For the connection between zero grade and lack of accent in IE, see e.g. Szemerényi (1996: 111–12).

[10] See especially the references to Ruijgh given at Ch. 7 n. 11.

accentuation pattern that is rare both among nouns with *-ετο-* and among the wider group of nouns with *-το-* built on non-*o*-grade roots.

According to van Wijk (1907: 342–4), Specht (1932: 55–6, 105, 115–17), and Cowgill (1965: 150), at least some CVRV reflexes of laryngeal-final roots may have arisen from full *e*- or *o*-grade root forms by assimilation or analogical remodelling.[11] On this view *κάματος* and *θάνατος* could go back to **κέματος* and **θένατος* or **κόματος* and **θόνατος*. A full re-evaluation of the hypothesis would of course require a survey of all Greek CVRVC reflexes of CRHC sequences and cannot rely on *θάνατος* and *κάματος* alone. We may note, however, that if *θάνατος* and *κάματος* in fact go back to *o*-grade forms **θόνατος* and **κόματος* they would belong to the class of nouns with *-το-* of the type of *φόρτος* 'load'. Specht (1932: 115–16), indeed, explicitly placed *θάνατος* and *κάματος* in the same formal and functional category as *φόρτος* 'load', *πλοῦτος* 'wealth', and so on. Specht's justification for doing so was that *θάνατος* and *κάματος* were 'Verbalabstrakta' like *φόρτος* 'load'. We have seen (pp. 179–80) that the so-called 'verbal abstracts' in *-το-* are semantically somewhat heterogeneous; from a semantic point of view *φόρτος* 'load', often quoted as a representative of the type, is a rather poor specimen of a 'verbal abstract'. We also saw, however, that words of type *φόρτος* and those of type *θάνατος* share two non-semantic characteristics, one formal and one distributional. The formal attribute is the absolutely consistent root accentuation while the distributional fact is their non-appearance among adjectives with *-το-*. In favour of the view that *θάνατος* and *κάματος* go back to **θόνατος* and **κόματος* it may be said that we would have only one class, historically speaking, of consistently recessive words in *-το-*, and only one type of formation with *-το-* that conspicuously appears among the nouns but not among the adjectives.

There may, however, be a phonological difficulty in the assumption that *o*-grade forms **d^{h}ónH$_2$tos* and **ḱómH$_2$tos* would have given rise, in the first instance, to Greek **θόνατος* and **κόματος*. On the basis of examples such as (Doric) *τόλμᾱ* < **tolH$_2$mā*, some scholars assume that a laryngeal was regularly lost in Greek, and perhaps already in Indo-European, in a sequence **oRHC* (and in a word-initial sequence **HRo*, which does not concern us here).[12] Hence Weiss (1996: 673) and Vine (1998: 68 n. 163) point out that **d^{h}ónH$_2$tos* and **ḱómH$_2$tos* should have given rise to Greek ***θόντος* and ***κόμτος*. Vine's own analysis of the formation of *θάνατος* and *κάματος* avoids this difficulty while still

[11] Van Wijk and Specht operate with 'schwa indogermanicum' rather than with laryngeals as such, but this point has no practical effect on their position regarding words of type *θάνατος*.

[12] See Beekes (1969: 238–42); Nussbaum (1997, arguing that the loss of a laryngeal in these environments occurred already in IE).

connecting the recessive accent of *θάνατος* and *κάματος* with that of nouns of type *φόρτος*. He argues (1998: 66–9) that *θάνατος* and *κάματος* were extracted secondarily from the negative compounds *ἀθάνατος* 'immortal' and *ἀκάματος* 'untiring' (which he regards as the outcomes of **n̥-dʰ(u̯)n̥H₂-eto-s* and **n̥-k̂m̥H₂-eto-s* and comparable to e.g. *ἄσχετος* 'irresistible' < **n̥-sĝʰ-eto-s*). Originally deverbative formations (like *ἄσχετος* beside *ἔχω* 'hold, resist'), *ἀθάνατος* and *ἀκάματος* were reinterpreted as possessive compounds meaning 'lacking death' and 'lacking fatigue', with second elements *θάνατος* 'death' and *κάματος* 'fatigue; toil'. This reanalysis was facilitated by the existence of action nouns such as *νόστος* 'return home', and the recessive accent of *θάνατος* and *κάματος* was modelled on the recessive accent of such action nouns.

To summarize the preceding discussion, the recessive accentuation of *θάνατος* and *κάματος* (otherwise not common among nouns with *-το-*, except among the consistently recessive type of *φόρτος*, *νόστος*, etc.) is consistent with either of two proposed explanations of the structure of *θάνατος* and *κάματος*: (*a*) *θάνατος* and *κάματος* come from **θόνατος* and **κόματος*, *o*-grade nouns of type *φόρτος*, or (*b*) *θάνατος* and *κάματος* were extracted from *ἀθάνατος* and *ἀκάματος* under the influence of nouns of type *φόρτος* (or, more immediately as regards semantics, *νόστος*). The first possibility is appealing for its simplicity but the second, suggested by Vine, avoids the phonological difficulties incurred by the first and is therefore perhaps to be preferred. But in either case, and most importantly in the present context, the recessive accentuation of *θάνατος* and *κάματος* is simply that of *φόρτος*, *νόστος*, and so on. Any wider conclusions concerning the Greek CVRV reflexes of disyllabic roots would have to be drawn in the context of a reappraisal of the whole question.

10.3 Words with suffix *-λο-*

Like words with other suffixes whose basic function is adjectival, words with the suffix *-λο-*, or a complex suffix including *-λο-*, are more likely to be recessive if they are nouns than if they are adjectives. From a synchronic point of view, the complex suffixes *-ιλο-* and *-υλο-* are treated as separate suffixes from simple *-λο-*. Synchronically, *-ιλο-* and *-υλο-* have an inherent penultimate accent whereas simple *-λο-* has an inherent final accent.

The massive incidence of recessive accentuation among nouns with *-λο-* apart from those in *-ιλο-* and *-υλο-* is, I think, a result of the general lack of productivity and synchronic viability of the suffix *-λο-*. The fact that even *-λο-* *adjectives* are quite often recessive (*-ιλο-* and *-υλο-* apart) is another symptom of the same situation. The suffix *-λο-* was not productive in Greek and was not readily recognized as a morphological element in a word, especially if that word was a noun. Even where the

word was an adjective, there was a certain tendency for -λο- not to be recognized as a suffix. This loss of synchronic identity of a suffix could result in recessive accentuation, as argued above for -ρο-, -το-, and -νο-.

The nouns with -λο- that were most likely to acquire recessive accentuation were those that occurred particularly infrequently, although recessive accentuation was more common than final accentuation for words of all frequencies. Unlike nouns in -ρο-, -το-, and -νο-, we do not find that nouns in -λο- tend to be finally accented if very infrequent. This fact is, I think, related to the general lack of synchronic viability of the suffix -λο-. We have seen that even -λο- adjectives show a certain incidence of recessive accentuation, as if even in adjectives the synchronic identity of the suffix -λο- was gradually being lost. It should, therefore, perhaps not surprise us if speakers did not attempt to analyse highly infrequent nouns with '-λο-' as containing a suffix -λο-.

The complex suffixes -ιλο- and -υλο- were more synchronically identifiable (even if not more productive) than simple -λο- and other complex suffixes including -λο-. This greater synchronic identifiability is reflected in the lower tendency to recessive accentuation found among words in -ιλο- and -υλο-, whether adjectives or nouns, and is likely to be related to the quite distinctive phonological shape of these suffixes. The suffixes also have a coherent synchronic function, or rather two functions. On the one hand, they are adjectival suffixes; on the other, they are suffixes that form words for animate beings. Possibly these animate beings should be regarded as small, sweet, or contemptible, if the traditional notion that -ιλο- and -υλο- are 'diminutive' suffixes is to be retained. However this may be, nouns with -ιλο- and -υλο- that did not denote animate beings became recessive. They did not have the semantics that belonged synchronically to the suffixes -ιλο- and -υλο-, and in this instance a change from non-recessive to recessive accentuation occurred (either before or after Wheeler's law) for every relevant word.

11 WORDS WITH SUFFIX *-μο-*

11.1 Formation

Indo-European had a suffix **-mo-* that formed primary deverbal *nomina actionis* (the type of Greek πταρμός 'sneezing'), primary adjectives (e.g. Greek θερμός 'hot'), and secondary adjectives (i.e. adjectives in which *-mo-* has been added after another suffix). The latter type is that of Greek adjectives in *-ιμο-* such as φαίδιμος 'shining, radiant, glistening', and those in *-υμο-* such as (ν)ήδυμος 'sweet, pleasant' (see Ch. 12 n. 12 and Chantraine 1933: 132–47, 151–7).

In Greek, *-μο-* was productive for forming abstract *nomina actionis* on verbal stems (not necessarily simple roots), e.g. σκυλμός 'rending' (base verb σκύλλω 'tear or rend apart'). The suffix was particularly productive for forming derivatives on verbal stems ending in certain consonants, especially velar and dental stops and *-s-*. A velar consonant followed by *-μο-* usually resulted in *-γμο-*, even when the voiced stop was not etymologically justified (as in διωγμός 'pursuit' beside διώκω 'pursue'), although there are also instances of *-χμο-*, e.g. ὄχμος 'fortress' beside ἔχω 'hold' (see Buck and Petersen 1945: 184–5). With a dental stop the usual outcome is *-σμο-*, with analogical *-σ-*, as in δασμός 'division of spoil' beside δατέομαι 'divide among oneselves'. Where the stem ended in original *-σ-* the outcome is also *-σμο-*, as in σεισμός 'shaking, earthquake' beside σείω < **tu̯eisō* 'shake' (see Buck and Petersen 1945: 184). There are some examples of *-σμο-* as an independently productive suffix, e.g. πλοχμός < **plok-smó-s* (Schwyzer 1953: 493; but cf. Vendryes 1932), and independent **-smo-* probably existed already in Indo-European (see again Buck and Petersen 1945: 184).

There are examples of independent suffixes *-θμο-* and *-ηθμο-*, e.g. σκαρθμός 'leaping, leap' (cf. σκαίρω 'skip, dance'), ἀρδηθμός 'means of watering' (cf. ἄρδω 'water'). The three most common synchronic terminations for words with suffix *-μο-*, or with a complex suffix containing *-μο-*, are *-σμο-* (614 words in the data considered here), *-γμο-* (82 words), and *-θμο-* (38 words).

Some words appear to have a termination *-αμο-*. This termination probably had more than one origin: either **-(C)H₂-* + **-mo-*, or a Sievers's variant **-m̥mo-* of the suffix **-mo-*, would have given rise to Greek *-αμο-* (cf. Bader 1974: 9). In some instances, *-αμο-* has spread

to roots where the *-α-* is not etymologically justified (e.g. *πλόκαμος* 'lock, braid'). This procedure was not productive in the historical period.[1]

Occasionally, nouns in *-μο-* are formed on stems that seem to be purely nominal, not verbal: so *γναθμός* 'jaw', a poetic doublet of *γνάθος*, *ἡ* 'jaw' (cf. Chantraine 1968–80: 230).

Some of the deverbative nouns with *-μο-* acquired new meanings instead of or in addition to their original abstract meanings. In particular, many nouns with *-μο-* acquired one or more concrete meanings, so that they denoted some object connected with the verbal action. Some of these words retained their original abstract meanings beside their new concrete meanings, but more often than not the abstract meaning was lost and the concrete meaning or meanings simply took over. The noun *μῶμος* means both 'blame, reproach' (abstract meaning) and also 'blemish' (concrete meaning). On the other hand, *κευθμός* should originally have meant 'action of hiding' but is attested only in the concrete sense 'hiding-place, hole'. Some nouns with *-μο-*, particularly those formed on nominal stems (e.g. *γναθμός* 'jaw'), probably had a concrete meaning from the beginning.

Greek has only a few primary adjectives with *-μο-* : *θερμός* 'hot', *δοχμός* 'aslant', perhaps *ὠμός* 'raw', and perhaps one or two others (cf. Chantraine 1933: 151).[2] The vast majority of Greek adjectives in *-μο-* consists of secondary formations in *-υ-μο-* (e.g. *(ν)ήδυμος* 'sweet, pleasant') and especially in *-ι-μο-* (e.g. *φαίδιμος* 'shining, radiant, glistening').

In this chapter the group of words with suffix *-μο-* is taken to include words with complex suffixes including *-μο-*, such as independent *-σμο-*, *-θμο-*, and *-αμο-*.

11.2 Comparative evidence

In Vedic Sanskrit, primary adjectives with *-ma-* regularly display final accentuation, as in *tigmá-* 'sharp' or *dasmá-* 'accomplishing wonderful deeds'. Some primary nouns with *-ma-* are also finally accented while others have root accentuation; cf. *idhmá-* m. 'firewood' but *sárma-* m. 'going, flowing' (Kuryłowicz 1958: 39; 1968: 42). Classical Sanskrit has a number of adjectives in *-ima-*, reminiscent of Greek *-ιμο-*, for

[1] Possible exceptions are: *ἐμπέραμος* 'skilled in the use of' (Callimachus +) and the variant *ἐμπείραμος* (Lycophron +), formed to *ἔμπειρος* 'skilled' (cf. R. Schmitt 1970: 98: 'Das . . . Adjektiv . . . ist eine "poetische Erweiterung" . . . von *ἔμπειρος*, deren Vorbild jedoch zu suchen bleibt'); *ἰταμός* 'headlong' (Aeschylus +), cf. *ἴτης*, gen. *ἴτου* 'one who goes in front' (on the unexpectedness of *-αμός* here cf. Chantraine 1968–80: 322 s.v. *εἶμι*). The suffixation of *σχινδαλαμός*/*σκινδάλαμος* 'splinter', with its variants *σκινδάλαμος*, *σχινδαλμός*, and *σκινδαλμός*, is unclear. Frisk (1960–72: ii. 839) suggests analogy with *κάλαμος* 'reed'.

[2] Penney (1978: 288) accepts only *θερμός* and *δοχμός*.

which grammatical sources prescribe unaccented *-ima-*, e.g. *sékima-* 'sprinkled with', *tyā́gima-* 'who abandons or expels' (Debrunner 1954: 354). However, it is disputed whether these can be compared directly with Greek *-ima-*. Their appearance in post-Vedic Sanskrit might speak rather for a Sanskrit innovation (see Debrunner 1954: 355).

A number of word equations between Greek words with *-μο-* and Sanskrit words with *-ma-* can be adduced, as shown in Table 11(a). Most of the equations involve forms with final accentuation in both Greek and Sanskrit. In the case of Greek *ὄγμος* 'furrow', if the correspondence with Sanskrit *ájma-* m. 'march, passage' is correct, both members are accented on the root. The same would be true for *οἶμος/οἶμος* 'path; song', should the rather doubtful connection with Sanskrit *éma-* n. 'course, way' be valid. Since both *ὄγμος* and *οἶμος/οἶμος* have an *o*-grade root, these equations may speak for an inherited category of root-accented primary nouns in *-μο-* with *o*-grade root. On the other hand, neither equation is beyond suspicion.

In Greek, primary *-μο-* nouns with *o*-grade root are divided between the final and recessive accent classes; cf. *στολμός* 'equipment' but *ὄχμος* 'fortress'. The situation is thus different from that of the consistently recessive primary *-το-* nouns with *o*-grade root. We shall return to the relationship, if any, between root vocalism and accentuation in nouns with *-μο-*, but shall postpone this discussion until other factors have been considered. For the moment, I shall not treat *-μο-* nouns with *o*-grade root as a separate category from those with other root vocalisms. Both the *-μο-* nouns with *o*-grade root and those without are split between final and recessive accentuation, so that no clear accentual division can be assumed *a priori*.

11.3 Problems to be considered

An overwhelming majority of Greek nouns with *-μο-* (784 out of 807 words, or 97%) is finally accented. A small minority, however (21 words, or 2.6%) is recessive. Two words included in the data considered here (*βρωμός/βρῶμος* 'food' and *σχινδαλαμός/σχινδάλαμος/σκινδαλαμός/σκινδαλμός* 'splinter') are uncertain in their accentuation; in what follows statistical statements will ignore these words.

The Greek primary *-μο-* adjectives *δοχμός* 'aslant', *θερμός* 'hot', and perhaps *ὠμός* 'raw' are finally accented. We have seen that this accentuation corresponds to that of the Sanskrit cognates *jihmá-* 'oblique', *gharmá-* m. 'heat', and *āmá-* 'raw, uncooked', and to the accentuation of Sanskrit primary *-ma-* adjectives in general. The Greek secondary adjectives in *-υ-μο-* (e.g. *(ν)ήδυμος* 'sweet, pleasant'), however, and the large class of those in *-ι-μο-* (e.g. *φαίδιμος* 'shining, radiant'), display constant recessive accentuation.

Table 11(a). *Word equations between Greek and Sanskrit words continuing an IE suffix* *-mo-

Greek	Outside Greek	Note on accents
i. *Certainly exact equation*		
δρυμά/δρύμα, τά (cf. δρῡμός, ὁ) 'thicket'	Skt *drumá-* m. 'tree'	Uncertain accent in Gk; final accent in Skt[a]
ii. *Equation certainly exact, but internal structure of word unclear*		
ὠμός 'raw'	Skt *āmá-* 'raw, uncooked'[b]	Final accent in Gk and Skt
iii. *Possibly exact correspondences, but phonological developments less clear and/or connection not certain*		
ὄγμος, ὁ 'furrow'	Skt *ájma-* m. 'march, passage'[c]	Root accent in Gk and Skt
οἶμος/οἶμος, ὁ/ἡ 'path; song'	Skt *éma-* n. 'course, way'[d]	Root accent in Gk and Skt
θῡμός, ὁ 'soul, spirit'	Skt *dhūmá-* m. 'smoke'[e]	Final accent in Gk and Skt
δοχμός 'aslant'	Skt *jihmá-* 'oblique'[f]	Final accent in Gk and Skt
iv. *Approximate word equation (with difference of vocalism)*		
θερμός 'hot'	Skt *gharmá-* m. 'heat'[g]	Final accent in Gk and Skt
v. *Equation approximate, and -μο- as original suffix a possibility only*		
γυμνός 'naked'	Skt *nagná-* 'naked'[h]	Final accent in Gk and Skt

[a] I count δρῡμός as a finally accented word for the purposes of the statistics given further on, since our ancient grammatical sources agree on prescribing final accentuation for the singular while the plural δρυμά/δρύμα, with a different length root vowel at an early date as well as different gender, seems to me different enough to be considered a slightly different word—albeit not different enough to merit its own entry in my main list of words with -μο-. One source, *EM* 96. 9, prescribes a recessive accent for the plural δρύμα, while allowing that others accent the word δρυμά. See p. 388 s.v. δρῡμός.

[b] On the IE pre-form and internal structure, see Mayrhofer (1986–2001: i. 170), with further bibliography.

[c] IE form generally reconstructed as *H_2oĝmos, but the etymology connecting ὄγμος to *H_2éĝō 'lead' and to Skt *ájma-* is doubted or rejected by e.g. Benveniste (1962: 107–8); Penney (1978: 284 n. 67, 289); Sihler (1995: 46 n. 1). For further bibliography see Puhvel (1984: 23). Penney (1978: 284 n. 67) notices that the Skt form is quoted as *ajmá-* at Macdonell (1910: 128), Debrunner (1954: 749), and Burrow (1955: 174), in contrast to *ájma-* given by Monier-Williams (1899: 10) and Macdonell (1924: 5). The only form I have been able to find in editions and concordances of the Rig-Veda is *ájma-*; I tentatively take *ájma-* as the correct form.

[d] Equation now generally rejected, chiefly because of the variant οἶμος in Gk: see e.g. Debrunner (1954: 749); Frisk (1960–72: ii. 363). For alternative suggestions about the etymology of οἶμος/οἶμος, with bibliography, see p. 384 s.v. οἶμος/οἶμος.

[e] See e.g. Mayrhofer (1986–2001: i. 795, reconstructing IE $*d^huH_2$-*mó*-). Chantraine (1968–80: 446) raises doubts on semantic grounds about the connection between *θῡμός* and the group of Skt *dhūmá*- m.

[f] On the phonological developments that would have to be assumed, see Beekes (1969: 183); Mayrhofer (1953–80: i. 435; 1986–2001: i. 591).

[g] The unpalatalized initial *gh*- in the Skt form demonstrates that the form goes back to $*g^{wh}$*ormo*-, not $*g^{wh}$*ermo*- which is the ancestor of Gk *θερμός*. Both *o*-grade and *e*-grade forms are otherwise attested, *e*-grade in Gk *θερμός* 'warm' and Albanian *zjarm, zjarr* 'heat', *o*-grade e.g. in Old Prussian *gorme* 'heat', Latin *formus* 'warm' (see Frisk 1960–72: i. 665). It has been assumed that the original adjective was $*g^{wh}$*ermo*-, the original noun $*g^{wh}$*ormo*- (see Frisk 1960–72: i. 665). There can be no certainty about this distribution, however, given that both adjective and noun are attested with both *o*-grade and *e*-grade vocalism. Penney (1978: 286–8) argues that IE had an adjective with *o*-grade vocalism and that *e*-grade vocalism, where it is found, is a secondary analogical development; substantival meaning would be due to secondary substantivization. If so, Gk *θερμός* and Skt *gharmá*- would have exactly the same ancestor ($*g^{wh}$*ormó*- 'hot'), with substantivization in Skt and replacement of -*o*- by -*e*- in Gk.

[h] This equation would be relevant on Nussbaum's view that the word for 'naked' originally had a -*mo*- suffix in Indo-Iranian and Gk (1976: 92–3); cf. Table 8(a) note c.

Two questions arise. Firstly, why do we find a small group of recessive nouns with -*μο*- beside the usual type with final accentuation? And secondly, why does the productive type of adjective with secondary -*μο*- have recessive accentuation (by contrast with the unproductive type with primary -*μο*-)? This chapter is devoted to the first question. The second will be approached in the next chapter, in the context of 'complex Caland formations'. In the present chapter I exclude from consideration all adjectives in -*ιμο*- and -*υμο*-, including those that have been substantivized.

11.4 Descriptive accounts

Four main claims have been made regarding the accentuation of nouns with suffix -*μο*-:

(*a*) I have already (p. 154) quoted Lubotsky's (1988: 121) observation that there is a correlation between the date of first attestation of a noun with -*μο*- and the incidence of recessive accentuation, a correlation that he attributes to a chronological development:

> Already in prehistoric times Greek had generalized a uniform accentuation for many categories and suffixes. . . . There are several indications that this process of generalizing a single accentuation pattern for every category went on in historical times. A good example is the suffix of nomina actionis -*μο*-, which shows both types of accentuation in Homer but is almost exclusively oxytone in later texts.

(*b*) The handbooks of Greek accentuation give a general rule that nouns ending in *-μος* are finally accented if the penultimate syllable is heavy, recessive if it is light (Chandler 1881: 80; Postgate 1924: 45–6).[3] This rule is not specifically formulated for words in which *-μο-* is a suffix, but as a general empirical rule for words ending in the sequence *-μος*; we shall consider further on whether this generalization has any specific validity for words with suffixal *-μο-*.

(*c*) According to Göttling (1835: 191), deverbal nouns in *-μος* with a consonant preceding the *-μο-*, usually having abstract meaning, are finally accented. He further notes that final accentuation also characterizes *some* words (my emphasis) with concrete meaning, e.g. *κευθμός* 'hiding-place, hole' (not Göttling's example). Göttling thus hints that although nouns with either abstract or concrete meaning can be finally accented (especially if they have a consonant preceding the *-μο-*, and therefore a heavy penultimate syllable), those with concrete meaning have a higher incidence of recessive accentuation.

(*d*) Bader (1974: 8–9), foreshadowed by Göttling (1835: 192–3), notices that nouns with *-μο-* that are not, in synchronic terms, transparently derived from a verbal root are mostly recessive. For example, *ὄλμος* 'mortar' is thought to be related historically to *εἰλέω* 'roll up' (Frisk 1960–72: ii. 379), but synchronically the relationship between the two words is not perspicuous either formally or semantically.

There is validity in all of these observations, but the factors involved (date of first attestation, weight of the penultimate syllable, abstractness or concreteness of meaning, and transparency of derivation) are not independent of each other. For example, a word is more likely to have a synchronically opaque derivation if it is very archaic, and so the proportion of Homeric nouns with *-μο-* whose derivation was synchronically not transparent at the period when the accentuation of ancient Greek was codified (see pp. 21–5) is much greater than that of post-Homeric nouns with *-μο-*. Again, since the suffix *-μο-* was productive in the historical period for forming abstracts, the more archaic words were the most likely to have developed a concrete meaning by the relevant period.[4] Since there is some connection between concreteness

[3] Although he does not state such a law in general terms, Arc. (65. 17–70. 8) prescribes final accentuation as the most general rule for almost every sub-group of common nouns terminating in a heavy syllable plus *-μος*. Recessive accentuation is prescribed as the most general rule for almost every sub-group of common nouns terminating in a light syllable plus *-μος*.

[4] As mentioned above (p. 239), some words with *-μο-* (e.g. *γναθμός* 'jaw') are formed on purely nominal stems and probably had concrete meaning from the beginning. Since *-μο-* was productive in the historical period only for forming derivatives on verbal stems, such denominative words are also liable to be early.

of meaning and date of first attestation and between opacity of derivation and date of first attestation, there is also at least an indirect connection between concreteness of meaning and opacity of derivation. The weight of the penultimate syllable is also not independent of the other factors, since *-μο-* was particularly productive in the historical period for forming nouns to stems ending in certain consonants (especially velar and dental stops and *σ*) but hardly productive for forming nouns to stems ending in vowels.[5] Survivals of the unproductive types are the most likely to have acquired concrete meaning, and to have become synchronically opaque, by the time of the codification of the ancient Greek accent. The accentuation of nouns with *-μο-* thus correlates to some extent with a number of different but interrelated factors. It will be worth trying to determine which of these are really relevant for the development of accentuation and which are only accidentally implicated; we shall start by considering each factor in more detail.

11.5 Chronology

In accordance with Lubotsky's claim (see p. 242), we can verify that those *-μο-* nouns attested in Homer include a far greater proportion of recessively accented words than those first attested after Homer. Table 11(b) shows the distribution of accentual types among the words with *-μο-* included in the data here considered. Recessive nouns clearly form a far greater proportion of the Homeric words (11 out of 49 words, or 22%) than of the post-Homeric words (10 out of 756, or 1.3%).[6] Before

Table 11(b). *Numbers of finally and recessively accented nouns with* *-μο-* (i) *attested in Homer, and* (ii) *first attested after Homer*

	Homeric	Post-Homeric	TOTAL
Finally accented	38	746	784
Recessive	11	10	21
TOTAL	49	756	805

[5] There are some derivatives in *-ηθμο-* to verbs in *-έω* and *-άω*. This procedure for forming a derivative to a vowel stem is attested already in Homer (e.g. *κηληθμός* 'rapture, enchantment' to *κηλέω* 'charm') and continues throughout our period (cf. e.g. Hippocrates' *πηδηθμός* 'pulsation' (*Epid.* 7. 39 (v. 408. 3 Littré)) to *πηδάω* 'leap, spring', or Lucian's *ὀγκηθμός* 'braying' (*Asin.* 15) to *ὀγκάομαι* 'bray'). Thus although it was possible to derive a *nomen actionis* in *-μο-* from a verb with stem-final *-α-* or *-ε-*, the complex suffix *-ηθμο-* appears to have been used to avoid adding *-μο-* *directly* to stem-final *-α-* or *-ε-*.

[6] A chi-squared test would not be valid here as one of the 'expected frequencies' is smaller than five, but the significance of the difference in proportions hardly needs demonstrating.

becoming too impressed with this result, however, one should consider the factors other than chronology that correlate with accentuation.

11.6 Weight of the penultimate syllable

The incidence of recessive accentuation is far greater for *-μο-* nouns with a light penultimate syllable than for those with heavy penultimate syllable, as Table 11(c) shows (numbers of Homeric words in each category are given in parentheses). A majority of the words with light penultimate syllable displays recessive accentuation (8 out of 10 words, or 80%), while only a small minority of those with heavy penultimate is recessive (13 out of 795 words, or 1.6%).[7] Given that a phonological factor, the weight of the penultimate syllable, appears to be implicated in accentuation, it is tempting to look for a phonological reason behind its involvement, such as an accent shift conditioned by the weight of the penultimate syllable. But one does not get very far by pursuing this line of enquiry. None of the accent shifts for which there is any independent evidence would give rise to the relevant distribution. An explanation must be sought elsewhere.

It has already been mentioned that the suffix *-μο-* was particularly productive for forming derivatives to stems ending in certain consonants. Synchronically, certain terminations (consisting of suffix *-μο-* plus preceding element) are particularly well represented. The three most common are *-σμο-*, *-γμο-*, and *-θμο-*, and the *-μο-* nouns with these terminations almost all have final accentuation. Of 734 nouns terminating in *-σμο-*, *-γμο-*, or *-θμο-*, only 2 (or 0.27%) are recessive: *ὄγμος* 'furrow' and *κόσμος* 'order; ornament; ruler'. Nouns terminating in *-ρμο-*, *-λμο-*, *-χμο-*, *-ῡμο-*, and *-ωμο-* are somewhat less well represented, and the proportion of recessive words is also rather higher (6 out of 47 words, or 13%). The remaining attested terminations with a heavy penultimate

Table 11(c). *Numbers of finally and recessively accented nouns with* *-μο-* (i) *with light penultimate syllable, and* (ii) *with heavy penultimate* (stop plus liquid sequences are counted as heterosyllabic)

	Light penultimate	Heavy penultimate	TOTAL
Finally accented	2 (2 Homeric)	782 (36 Homeric)	784 (38 Homeric)
Recessive	8 (3 Homeric)	13 (8 Homeric)	21 (11 Homeric)
TOTAL	10 (5 Homeric)	795 (44 Homeric)	805 (49 Homeric)

[7] Here too a chi-squared test would be invalid, but again the significance of the result hardly needs formal demonstration.

syllable, *-οιμο-*, *-μμο-*, *-τμο-*, *-ημο-*, *-δμο-*, *-αιμο-*, and *-ειμο-*, are less well represented still; among nouns with these terminations the proportion of recessive words is even higher (5 out of 14 words, or 36%).[8] Among the nouns with heavy penultimate syllable, the incidence of recessive accentuation thus varies according to the termination involved, and appears to correlate with the number of attested *-μο-* nouns having the relevant termination. Thus, the particularly low incidence of recessive accentuation among words with the terminations *-γμο-*, *-θμο-*, and *-σμο-* is related to the very high number of *-μο-* nouns with those terminations.

It is highly unlikely that accentuation is determined *directly* by the number of words with a particular termination. The relationship between accentuation and the numbers of words with certain terminations is likely to be an effect of some other causal relationship. The number of attested words having a given termination may well be related to the productivity of *-μο-* for forming words with the termination in question. It is important not to confuse the productivity of a formation with its frequency of occurrence, but in most cases a formation that is particularly productive in a language will also be particularly well represented. In our case I shall tentatively take the number of words attested with a particular termination as some measure of the productivity of *-μο-* for forming words with that termination during our period.

Words with light penultimate syllable (i.e. terminating in *-αμο-*, *-εμο-*, or *-υμο-*) have a higher incidence of recessive accentuation than even the least well represented of the types with heavy penultimate syllable, although there are more attested nouns with *-αμο-* and more with *-εμο-* than with any one of the terminations *-οιμο-*, *-μμο-*, *-τμο-*, *-ημο-*, *-δμο-*, *-αιμο-*, or *-ειμο-*.[9] Given that the incidence of recessive accentuation among words with heavy penultimate syllable varies with the productivity of the particular termination involved, the very high incidence of recessive accentuation among words with light penultimate syllable is likely to be related to the extreme lack of productivity in the historical period (and apparently positive avoidance; see n. 5 above) of simple *-μο-* for forming derivatives to stems ending in vowels, and of complex suffixes consisting of short vowel plus *-μο-*.

As well as belonging to an unproductive type, all the words with light penultimate syllable are synchronically non-transparent or in some way irregular, and the short vowel preceding *-μο-* is in most instances synchronically unmotivated. The words involved are the following

[8] The numbers of words with each individual termination are as follows (numbers of recessive words are shown in parentheses): *-σμο-* 614 (1); *-γμο-* 82 (1); *-θμο-* 38 (0); *-ρμο-* 16 (3); *-λμο-* 10 (1); *-χμο-* 11 (1); *-ῡμο-* 5 (0); *-ωμο-* 5 (1); *-οιμο-* 3 (1); *-μμο-* 3 (0); *-τμο-* 3 (1); *-ημο-* 2 (2); *-δμο-* 1 (0); *-αιμο-* 1 (0); *-ειμο-* 1 (1).

[9] Five nouns with *-αμο-*, four with *-εμο-*; only one with *-υμο-*.

(Homeric words are indicated by the abbreviation 'Hom.' in parentheses).

Recessive:
κάλαμος 'reed'
ἄνεμος 'wind' (Hom.)
ὄρχαμος 'leader, chief' (Hom.)
πλόκαμος 'lock, braid' (Hom.)
ἄργεμον/ἄργεμος 'albugo, white speck in the eye'
ἰᾱ́λεμος (Ionic ἰήλεμος) 'dirge'
θύμον/θύμος 'thyme'
ἄνθεμον 'blossom'

Finally accented:
οὐλαμός 'throng of warriors' (Hom.)
ποταμός 'river' (Hom.)

The first two recessive words listed, κάλαμος 'reed' and ἄνεμος 'wind', are etymologically isolated in Greek and can be taken as -μο- derivatives only on the strength of comparative evidence.[10] The base verb for ὄρχαμος 'leader, chief' has been thought with some plausibility to be the verb ἄρχω 'lead' (Bader 1974: 7–9; cf. Kretschmer 1900: 268). But the -α- preceding the suffix has no synchronic justification (whatever its historical origin), and the *o*-grade root is also relatively unusual for a Greek -μο- derivative. Although πλόκαμος 'lock, braid' is clearly connected to πλέκω 'plait', the -α- is not synchronically motivated (and indeed its historical origin is unclear). There exists on this root a -μο- (originally *-σμο-) derivative of more productive type, namely πλοχμός 'lock, braid'; this word shows the expected final accent. The word ἄργεμον 'albugo, white speck in the eye' is clearly connected to ἀργός 'white, swift', ἀργεστής 'clearing, brightening; north-west wind', and related words, but the suffix -μο- was productive for forming nouns from verbal stems, and at least synchronically there is no obvious verb to connect. The suffixation -ε-μο- has no obvious motivation in synchronic terms (and its historical motivation is again unclear), and the neuter gender (which is better attested than the masculine variant) is again irregular.[11] The interjection ἰή forms the basis for ἰᾱ́λεμος 'dirge', but the suffixation -λεμο- is again irregular (cf. Chantraine 1968–80: 452). The plant name θύμον (or θύμος) 'thyme' shows a clear formal connection with θύω 'offer by burning'. The form θύμον is, however,

[10] κάλαμος 'reed' is related to Lat. *culmus* 'stalk', OHG *halm* 'stalk', etc., and likely to be a derivative to a disyllabic root (although a base form is nowhere attested as such): see Ernout and Meillet (1979: 155 s.v. *culmus*). The base verb for ἄνεμος 'wind' is preserved in Skt *ániti* < *H_2enH_1ti* 'breathe' (see Mayrhofer 1986–2001: i. 72 s.v. *AN^1*).

[11] Frisk (1960–72: i. 131) allows that the possibility of a transformed loan word cannot be ruled out.

again atypical of nouns with -μο- in having neuter gender. The variant θύμος displays no formal irregularity but is attested only once (at Dioscorides 3. 36. 1). The word ἄνθεμον 'blossom' is clearly related both to ἄνθος, τό 'blossom' and to ἀνθέω 'blossom, bloom'. From a synchronic point of view, ἄνθεμον could be taken as a -μο- derivative on the stem of ἀνθέω, but the neuter gender is again atypical.

The finally accented words οὐλαμός 'throng of warriors' and ποταμός 'river' are no more regular in synchronic terms than the recessive words just surveyed. For οὐλαμός 'throng of warriors' the base is thought to be the verbal root of εἰλέω 'press' (Chantraine 1968–80: 836), but synchronically the relationship is formally and semantically unclear. Perpillou (1991) has argued that in antiquity ποταμός was synchronically connected to πίνω 'drink' (cf. the verbal adjective ποτός 'drunk, for drinking') and indeed this etymology is found in ancient grammatical sources (collected by Perpillou 1991: 190–1), but neither the formal nor the semantic connection is typical for -μο- derivatives. The same can be said for both of the etymologies that have been proposed in historical terms, with πίπτω 'fall' and with πετάννῡμι 'spread open' (see Chantraine 1968–80: 931), although the latter would at least offer a synchronic motivation for the element -α-.

As well as being synchronically irregular in formation, all the -μο- nouns with light penultimate syllable have a concrete meaning. These words are thus subsumed under the group of nouns with concrete meaning, to be considered next, as well as under the group of words whose derivation is synchronically opaque.[12]

11.7 Abstractness versus concreteness of meaning

Deciding whether a given word is abstract or concrete in meaning (or sometimes abstract and sometimes concrete) can be difficult. For present purposes I have followed the unsophisticated rule of thumb that if a word (*a*) denotes something that cannot be directly apprehended as such by one of the five senses, and/or (*b*) denotes an action (whether or not its happening can be directly apprehended by one of the five senses), it has an abstract meaning. In other cases, a word has a concrete meaning.[13] The vast majority of -μο- nouns I have classified as abstract

[12] It should perhaps also be mentioned that there are many words ending in -αμος or -αμον that are of foreign or probably foreign origin (Chantraine 1933: 132–3). Thus βάλσαμον (and the variant βάλσαμος) 'balsam-tree' and other names of plants and plant products in -αμο- are of foreign, probably Semitic, origin. The influence of a substantial class of recessive loan words in -αμο- is conceivably relevant for the recessive accentuation of most native words in -αμο-.

[13] Meißner (1995: 138–9) discusses possible definitions (syntactic or semantic) of the terms 'abstract' and 'concrete'. Although he decides to avoid the terms as far as possible

in fact denote actions and are translatable (more or less idiomatically) using English gerunds in *-ing*.

Beyond the difficulty of drawing up criteria for distinguishing abstract and concrete nouns, some problems of classification remain. It is particularly difficult to draw a clear distinction between words denoting the action of making a certain sound and those denoting the sound itself. Should ὑλαγμός 'barking', for example, be classified as a verbal abstract or a concrete word denoting a particular sound? In such cases, I have made a decision based on my judgement of how abstractly or concretely the word is to be taken where it is attested. Where particular uncertainty was involved in the assignment of a word to one of the three semantic categories abstract, concrete, or both abstract and concrete (i.e. sometimes abstract and sometimes concrete), this uncertainty has been indicated in Appendix 5 by means of a question mark. In assigning words to semantic categories very rare meanings of otherwise relatively common words have been left out of account, since if such meanings had not been disregarded the words classified as having both abstract and concrete meanings would have been multiplied to an unhelpful degree. Very rare uses of a word are in any case unlikely to play a significant role in determining its accentuation.

Of the 21 recessive *-μο-* words 16 have a meaning that I classify as concrete rather than abstract: πλόκαμος (Hom.) 'lock, braid'; κάλαμος 'reed'; ὄρχαμος (Hom.) 'leader, chief'; ὄγμος (Hom.) 'furrow'; ἄργεμον (and ἄργεμος) 'albugo, white speck in the eye'; ἄνθεμον 'blossom'; ἰάλεμος 'dirge'; ἄνεμος (Hom.) 'wind'; δῆμος (Hom.) 'district, country, people'; οἶμος/οἶμος (Hom.) 'path; song'; ὄλμος (Hom.) 'mortar'; θέρμος 'lupine'; ὅρμος (Hom.) 'cord, chain'; τόρμος 'hole, socket'; θύμον (and θύμος) 'thyme'; and ὄχμος 'fortress'. The remaining five words are κόσμος (Hom.) 'order; ornament; ruler' and μῶμος (Hom.) 'blame, reproach; blemish', which have both abstract and concrete meanings, and βλάστημος 'growth', δεῖμος 'fear, terror',[14] and πότμος (Hom.) 'that which befalls one, lot, destiny', with abstract meaning only.

as not useful for his purpose, his favoured definition appears to be a semantic one similar to mine. He also emphasizes the possibility of a semantic development from abstract to concrete: 'If one defines abstractness as a quality which, as such, has necessarily no physical existence, then formations like τάχος "speed" or κάλλος "beauty" may be regarded as abstract but as soon as the quality is identified with an object, the abstractness vanishes as has happened in the case of γλεῦκος which exclusively means "sweet wine", but cf. ἀγλευκής "not sweet, having no sweetness" ' (1995: 139).

[14] I have not classified δεῖμος as a Homeric word, although a personified Δεῖμος appears in Homer, since in principle I exclude proper names from consideration. This is, of course, a marginal case.

The high incidence of concrete meaning among the recessive nouns with *-μο-* contrasts strikingly with the situation for finally accented nouns with *-μο-*, a majority of which has abstract meaning.[15]

The extent to which concrete meaning correlates with recessive accentuation varies depending on the exact shape of the termination. Words terminating synchronically in *-γμο-*, *-θμο-*, and *-σμο-* display almost constant final accentuation (with only 2 exceptions, *ὄγμος* 'furrow' and *κόσμος* 'order; ornament; ruler', out of 734 words), although concrete meaning is by no means impossible among these words (cf. e.g. *κευθμός* 'hiding-place, hole', *κλισμός* 'couch').[16] Leaving aside words terminating in *-γμο-*, *-θμο-*, and *-σμο-*, the data may be summarized as shown in Table 11(d). Words with either only abstract meaning or both abstract and concrete meanings are almost always finally accented, the only exceptions out of 35 words being *βλάστημος* 'growth', *δεῖμος* 'fear, terror', *πότμος* 'that which befalls one, lot, destiny', and *μῶμος* 'blame, reproach; blemish'. The words with concrete meanings only are divided between final and recessive accentuation. Notice that the proportion of recessive nouns in the Homeric group of words with concrete meaning only (7 out of 21 nouns, or 33%) is no larger (in fact non-significantly smaller[17]) than that for the post-Homeric group (8 out of 15 nouns, or 53%). There is therefore no need to assume that Homeric nouns with *-μο-* are more prone to recessive accentuation than post-Homeric ones. Only words with concrete meaning have a significant chance of being recessive, and the chance that a word with concrete meaning is recessive is no greater for the Homeric words than for the post-Homeric ones. The difference between the overall proportion of Homeric *-μο-* nouns that are recessive and that of post-Homeric *-μο-* nouns is due in part to the fact that the proportion of *-μο-* nouns having only concrete meaning is greater in the Homeric than in the post-Homeric vocabulary, and in part to the

[15] I have not counted the total numbers of abstract, concrete, and both abstract and concrete nouns with *-μο-*. Of the 91 finally accented nouns with *-μο-* actually listed in App. 5 (i.e. excluding most post-Homeric words in *-γμο-*, *-θμο-*, and *-σμο-*), however, 55 have an abstract meaning only, 31 have a concrete meaning only, and 5 have both types of meaning. Given the bias of the words listed in App. 5 to Homeric words, and given the likely correlation between antiquity and concrete meaning among nouns with *-μο-* (see p. 243), the overall preponderance of abstract meaning in finally accented nouns with *-μο-* is likely to be higher still.

[16] Again, I have not counted total figures. Of the 39 (chiefly Homeric) finally accented words in *-γμο-*, *-θμο-*, and *-σμο-* listed in App. 5, 27 have an abstract meaning only, 10 have a concrete meaning only, and 2 have both types of meaning.

[17] $X^2 = 1.44$; $p = 0.23$. In a situation where the background probability of recessive accentuation for words with concrete meaning is the same for Homeric as for post-Homeric words, one would expect to obtain a chi-squared value as great as or greater than ours in over 20% of trials.

Table 11(d). *Numbers of finally and recessively accented nouns with -μο- (excluding those terminating in -γμο-, -θμο-,* and *-σμο-*) (i) *with only abstract meaning*, (ii) *with only concrete meaning, and* (iii) *with both abstract and concrete meanings*

	Abstract meaning only	Concrete meaning only	Abstract and concrete meanings	TOTAL
Finally accented	28 (4 Homeric)	21 (14 Homeric)	3 (0 Homeric)	52 (18 Homeric)
Recessive	3 (1 Homeric)	15 (7 Homeric)	1 (1 Homeric)	19 (9 Homeric)
TOTAL	31 (5 Homeric)	36 (21 Homeric)	4 (1 Homeric)	71 (27 Homeric)

fact that the proportion of *-μο-* nouns that terminate in *-γμο-*, *-θμο-*, or *-σμο-*, terminations displaying almost constant final accentuation, is greater for the post-Homeric vocabulary than for Homer. The most significant factor here is the vast number of *-σμο-* words appearing after Homer.

On the other hand, the proportion of recessive words among the nouns with light penultimate syllable (all of which have only concrete meaning) is considerably greater than the proportion of recessive words among the nouns with heavy penultimate syllable and only concrete meaning (again excluding nouns with terminations *-γμο-*, *-θμο-*, and *-σμο-*): 8 out of 10 words with light penultimate syllable are recessive (80%), as opposed to 7 out of 26 words with concrete meaning only and heavy penultimate syllable (27%).[18] The very high incidence of recessive accentuation among the words with light penultimate syllable cannot, therefore, be accounted for *solely* as a side-effect of the fact that each of these words has only concrete meaning. The lack of productivity of complex suffixes consisting of short vowel plus *-μο-*, and of simple *-μο-* for forming derivatives on stems ending in short vowels, as well as the synchronic irregularity or opacity of the individual forms with light penultimate syllable, remain important factors for the accentuation of these words.

11.8 Synchronic transparency of derivation

So far, we have seen two major factors influencing the accentuation of a word with *-μο-*: the exact shape of the termination and the meaning of the word. But we might still wonder why, for example, *κορμός* 'tree

[18] A chi-squared test would be invalid here as one of the 'expected frequencies' is smaller than five.

trunk' is finally accented while *ὅρμος* 'cord, chain' is recessive, even though both words terminate in exactly the same way, and both have concrete meaning.

For some nouns with *-μο-*, there is a synchronically obvious formal connection to some base form, even if the meaning of the derivative has become concrete and thus non-typical for nouns with *-μο-*. Thus, *κευθμός* 'hiding-place, hole' is very clearly connected to *κεύθω* 'cover, hide'. For other words there may be no very obvious formal connection with a base word. This synchronic lack of a base word may have arisen because the base word has been lost from the language, as in the case of *κόσμος* 'order; ornament; ruler',[19] or because the operation of sound change or other processes has made the stem of the base word formally unlike that of the derivative. Thus, *ὅρμος* 'cord, chain' is historically a derivative of the verb continued by *εἴρω* 'tie, join', but the difference in root vowel between base word and derivative is not even the more familiar *-ĕ-/-ŏ-* alternation but an alternation between *ē̯* and *ŏ* (the *ē̯* being written *ει* and due to the loss of **-i̯-* after *-ρ-*); in addition *ὅρμος* has a rough breathing where *εἴρω* does not.[20] We might expect that in such cases a word was less likely to have been felt to be a derivative in *-μο-* than in cases where there was a synchronically clear formal connection between derivative and base word. We must consider whether recessive accentuation is more likely, as suggested by Bader (1974: 8–9), where a clear formal connection between base word and derivative is lacking than where such a synchronic connection is present.

Assessing the synchronic transparency or opacity of a derivational form poses certain problems. For our words with *-μο-* we need to decide whether, for example, a relationship between *βωμός* 'raised platform, stand; altar' and *βαίνω* 'walk, step' was felt synchronically, despite the rather different root vocalisms. Furthermore, some words may have a synchronically transparent etymology that is historically incorrect (i.e. a 'popular etymology'), and this possibility ought to be taken into account.

A way of providing an independent check on the claim that the finally accented nouns with *-μο-* tend to be etymologically transparent whereas the recessively accented ones tend not to be is to compare ancient etymological discussions of the two groups of words. One cannot, of course, simply take the grammarians' words as an expression of 'native speaker intuitions', since ancient etymologies were often arrived at by the exercise of considerable ingenuity, but the ancient grammarians

[19] Haebler (1967) argues for an old verbal root **k̂es-* 'set in order'.

[20] Frisk (1960–72: i. 469) suggests that *εἴρω* may have lost the expected rough breathing (prescribed at *EM* 304. 30) under the influence of compounds such as *συνείρω* 'string together', which occur more frequently than the simplex.

nevertheless provide us with some useful criteria for assessing the synchronic etymological transparency of a word. A word for which the ancient grammarians give us a single etymology is more likely to have been synchronically transparent than one for which several alternative etymologies are offered. Also, a word for which a derivation that is offered implies that the word contains the suffix *-μο-* (or a complex suffix including *-μο-*)[21] is more likely to have been felt synchronically to contain the suffix *-μο-* than a word for which the ancient grammarians offer a derivation not involving a suffix *-μο-*.

It is instructive to compare the etymologies offered by the *Etymologicum Magnum* (to use this as a well-defined corpus of ancient etymologies) for the various words in which we are interested. However, since the grammatical tradition on which the *Etymologicum Magnum* draws is much richer for the language of Homer than for the rest of the Greek vocabulary, Homeric and post-Homeric words cannot fairly be compared in this way. We shall therefore consider only the etymologies offered for those nouns with *-μο-* attested in Homer. It may or may not be felt that the conclusions can be extended intuitively to the post-Homeric nouns with *-μο-*, but I wish here to exploit the richness of the grammatical tradition for the Homeric vocabulary and to argue on the basis of a restricted, but valuable, set of evidence.

Of our 38 finally accented Homeric nouns with *-μο-*, 34 (all except *ὑλαγμός* 'barking',[22] *ἑλκηθμός* 'being carried off, violence suffered', *μῡκηθμός* 'lowing', *μυχμός* 'moaning') are discussed in the *Etymologicum Magnum*. For two of these words, *ὀρχηθμός* 'dance' and *μηνιθμός* 'wrath', only a partial derivation is given and we cannot tell whether a suffix *-μο-* is assumed. For 20 of the remaining 32 words,[23] the *Etymologicum Magnum* gives a single derivation involving the suffix *-μο-*. For the

[21] Ancient grammarians do not explicitly speak in terms of suffixes. However, in some cases it is clear that a word is derived by the addition of *-μο(ς)*, whereas in other instances a word is said to be derived from a base form already containing *-μ-*, or created by insertion of *-μ-* into a word already ending in *-ος*.

[22] For this as a Homeric word at least in date (whether or not it is taken to occur as such in the Homeric poems), see p. 380 s.v.

[23] *οὐλαμός* 'throng of warriors' (concrete meaning only, henceforth 'C'; *EM* 640. 28); *ἴϋγμός* 'shout of joy' (abstract meaning only, henceforth 'A'; *EM* 480. 1); *ἆρδμός* 'place for animals to drink' (C; *EM* 137. 41); *κνυζηθμός* 'whining, whimpering' (A; *EM* 522. 47); *πορθμός* 'ferry, strait' (C; *EM* 683. 15, 141. 28); *κευθμός* 'hiding-place, hole' (C; *EM* 507. 1); *κορμός* 'tree trunk' (C; *EM* 141. 26, 683. 15); *δασμός* 'division of spoil' (A; *EM* 249. 4); *δεσμός* 'band, bond' (C; *EM* 257. 56, 291. 4); *κλισμός* 'couch' (C; *EM* 520. 6); *θρωσμός* 'springing; ground rising from the plain' (abstract and concrete meanings, henceforth 'A/C'; *EM* 456. 55); *ἐρετμόν* 'oar' (C; *EM* 370. 56); *ῥῡμός* 'chariot-pole' (C; *EM* 706. 33); *δρῡμός* 'thicket' (C; *EM* 228. 26); *βρεχμός* 'front part of the head' (C; *EM* 212. 12); *πλοχμός* 'lock, braid' (C; *EM* 645. 41, 677. 8); *ἰωχμός* 'rout, pursuit' (A; *EM* 481. 33); *ῥωχμός* 'cleft' (C; *EM* 706. 4; cf. 141. 10); *βωμός* 'raised platform, stand; altar' (C; *EM* 217. 49); *ψωμός* 'morsel, bit' (C; *EM* 818. 1).

twelve remaining finally accented nouns with *-μο-*,[24] we are either offered a derivation that does not involve a suffix *-μο-*, or two or more alternative derivations (one or more of which may involve a suffix *-μο-*).

All of our eleven recessive Homeric nouns with *-μο-* are discussed in the *Etymologicum Magnum*. Of these 11, the *Etymologicum Magnum* gives a single derivation involving the suffix *-μο-* for only 3.[25] For the other 8,[26] the *Etymologicum Magnum* gives either a derivation not involving *-μο-*, or alternative derivations. Thus, 20 out of 32 finally accented nouns with *-μο-*, or 62.5%, are given a single etymology involving the suffix *-μο-*, as against only 3 out of 11 recessive nouns with *-μο-*, or 27%. A difference in proportions as large as this or larger would have a chance of only about one in twenty-three of occurring in a situation where the words to which the *Etymologicum Magnum* gives a single derivation involving *-μο-* are distributed randomly between the finally accented and recessive classes.[27]

A summary of the information obtained using the *Etymologicum Magnum* is given in Table 11(e). (Words whose derivation is not discussed, or only partially discussed, in the *Etymologicum Magnum* are omitted from the information given here.) The accentuation of nouns with abstract meaning (or both abstract and concrete meanings) is virtually unaffected by the degree to which they are easily etymologizable. Of the fifteen Homeric *-μο-* nouns for which the *Etymologicum Magnum* discusses the derivation in full and which have abstract meaning or both abstract and concrete meanings, all except three have final accentuation, regardless of whether they are given a single etymology by the *Etymologicum Magnum*. Among the nouns with concrete meaning only, however, we can see that recessive words presented difficulties to the ancient grammarians considerably more frequently than did finally accented words—6 out of 8 recessive words (75%), as opposed to only 5 out of 20 finally accented words (25%), fail to be given just a single

[24] *ἀριθμός* 'number' (A; *EM* 143. 47; cf. 500. 50); *ἀφλοισμός* 'foaming at the mouth' (A; *EM* 177. 48); *γναθμός* 'jaw' (C; *EM* 236. 1); *θεσμός* 'that which is laid down, law, ordinance' (A; *EM* 291. 4, 445. 15); *θῡμός* 'soul, spirit' (A; *EM* 458. 6); *κηληθμός* 'rapture, enchantment' (A; *EM* 510. 31); *κλαυθμός* 'weeping, wailing' (A; *EM* 517. 12; cf. 500. 50, 586. 38); *λαιμός* 'throat, gullet' (C; *EM* 558. 33; cf. 563. 54); *λοιμός* 'plague' (A; *EM* 568. 20; cf. 69. 41, 523. 22); *ὀφθαλμός* 'eye' (C; *EM* 644. 15); *ποταμός* 'river' (C; *EM* 685. 4); *σταθμός* 'standing-place for animals, farmstead' (C; *EM* 383. 11, 724. 45, 710. 53).

[25] *μῶμος* 'blame, reproach; blemish' (A/C; *EM* 593. 15); *ὄρχαμος* 'leader, chief' (C; *EM* 634. 32; cf. 129. 17); *πλόκαμος* 'lock, braid' (C; *EM* 677. 7).

[26] *ἄνεμος* 'wind' (C; *EM* 103. 37); *δῆμος* 'district, country, people' (C; *EM* 264. 41); *κόσμος* 'order; ornament; ruler' (A/C; *EM* 532. 10; cf. 45. 35); *ὄγμος* 'furrow' (C; *EM* 613. 34); *οἶμος* 'path; song' (C; *EM* 617. 55); *ὄλμος* 'mortar' (C; *EM* 622. 53); *ὅρμος* 'cord, chain' (C; *EM* 631. 30); *πότμος* 'that which befalls one, lot, destiny' (A; *EM* 685. 29).

[27] $X^2 = 4.1$; $p = 0.043$.

Table 11(e). *Numbers of finally and recessively accented Homeric nouns with -μο-* (i) *to which the* Etymologicum Magnum *assigns a single derivation involving a suffix -μο-, and* (ii) *to which the* Etymologicum Magnum *does not assign a single derivation involving a suffix -μο-*

	EM gives a single derivation involving a suffix -μο-	*EM* does not give a single derivation involving a suffix -μο-
Finally accented	20 (4A, 1A/C, 15C)	12 (7A, 5C)
Recessive	3 (1A/C, 2C)	8 (1A, 1A/C, 6C)

Note: A = abstract meaning only; A/C = both abstract and concrete meanings; C = concrete meaning only.

etymology involving -μο-.[28] We can deduce, therefore, that -μο- nouns with only concrete meaning are more likely to be recessively accented if they are synchronically opaque than if they are transparent as -μο- derivatives.

It must nevertheless be stressed that not *all* synchronically opaque words with only concrete meaning acquired recessive accentuation. For example, the finally accented words λαιμός 'throat' and ὀφθαλμός 'eye' presented particularly great difficulties to the ancient etymological tradition (see *EM* 558. 33, 563. 54, 644. 15).

11.9 Root vocalism

Haebler (1967: 107) suggests in passing that -μο- nouns with *o*-grade root often have root accentuation. As noted above (p. 240), however, -μο- nouns with *o*-grade root are by no means *all* root-accented, by contrast with the consistently root-accented *o*-grade nouns in -το-. The -μο- nouns whose root has *o*-vocalism that is clearly due to an *o*-grade root are the following.[29]

[28] A chi-squared test would not be valid here as two of the 'expected frequencies' are smaller than five.

[29] I omit from this list words whose root contains a poorly understood -ω- : ζωμός 'soup, sauce'; μῶμος 'blame, reproach; blemish'; ψωμός 'morsel, bit'; and βρωμός/βρῶμος 'food', a word whose root had final $*H_3$ and for which a zero-grade or *e*-grade root, as well as an *o*-grade root, would have given the Gk form phonologically. This last word is, in any case, uncertain in its accentuation.

Finally accented:
ἀλοιμός 'polishing; plastering'
στολμός 'equipment'
κορμός (Hom.) 'tree trunk'
φορμός 'basket for carrying corn, etc.'
πλοχμός (Hom.) 'lock, braid'
βωμός (Hom.) 'raised platform, stand; altar' (IE $*g^{\mathrm{w}}oH_2mos$; see Beekes 1969: 167)
θωμός 'heap' (IE $*d^{\mathrm{h}}oH_1mos$; see Beekes 1969: 166)

Recessive:
ὅρμος (Hom.) 'cord, chain'
τόρμος 'hole, socket'
κόσμος (Hom.) 'order; ornament; ruler'
πότμος (Hom.) 'that which befalls one, lot, destiny'
ὄχμος 'fortress'

It is difficult to see here any specific evidence that accentuation is influenced by *o*-grade root vocalism. The three Homeric words with *o*-grade root and final accentuation were all found to be among those to which the *Etymologicum Magnum* assigns a single derivation involving the suffix *-μο-*. The same was not true for any of the three Homeric words in the recessive list. Bader (1974: 8–9) regards the connection between *τόρμος* 'hole, socket' and *τείρω* 'wear down' as no longer felt in Greek, and loss of synchronic connection would seem to be at least a possibility, especially given the semantic divergence between derivative and base word. The word in any case has concrete meaning, which we have already seen to be a factor predisposing a noun with *-μο-* to recessive accentuation (§ 11.7 above). It is difficult to judge whether a connection between *ὄχμος* 'fortress' and *ἔχω* 'hold' would have been felt synchronically, but this word again has concrete meaning.

The proportion of recessive words among those with *o*-grade root vocalism is certainly higher than the proportion among nouns with *-μο-* generally, but this difference need not be due to a specific relationship between *o*-grade root and recessive accentuation. Ablaut alternation between derivational base and *-μο-* derivative was unproductive in the historical period, and therefore the group of words with *o*-grade root includes a particularly high proportion of archaic words. These in turn are particularly likely both to be morphologically opaque in synchronic terms and to have concrete meaning, and these factors increase the likelihood of recessive accentuation.

An argument for an inherited category of root-accented *-μο-* nouns with *o*-grade root would have to rest on the two word equations *ὄγμος* 'furrow' : Skt *ájma-* m. 'march, passage' and *οἶμος*/*οἶμος* 'path; song' :

Skt *éma-* n. 'course, way', neither of which is beyond suspicion and the second of which tends now to be rejected (see Table 11(a) note d).

11.10 Conclusions

The vast majority of nouns formed with *-μο-* has final accentuation, and finally accented *-μο-* was a highly productive suffix in the historical period. The comparatively very few recessive nouns with *-μο-* show strong signs—accentuation apart—of being synchronically atypical of nouns with *-μο-*.

Lack of abstract meaning is almost a necessary condition for recessive accentuation. Only 5 out of 21 recessive nouns with *-μο-* (listed on p. 249) have abstract meaning. Absence of abstract meaning is, however, by no means a *sufficient* condition for recessive accentuation. Many *-μο-* words have only concrete meaning and yet are finally accented, as *ἠθμός* 'strainer' or *κορμός* 'tree trunk'.

The likelihood of a noun with *-μο-* being recessive is greatly reduced if the word belongs to one of the very productive sub-classes of nouns with *-μο-*, namely those in *-γμο-*, *-θμο-*, and *-σμο-*. Recessive accentuation is almost unknown among words with these terminations, although words with concrete meaning are fairly numerous (e.g. *κευθμός* 'hiding-place, hole', *κλισμός* 'couch'). Words with the unproductive termination *-αμο-*, on the other hand, are highly prone to recessive accentuation.

A further criterion, the synchronic unanalysability of certain words, is also relevant. This observation can shed light on a question raised above (pp. 251–2): why is *κορμός* 'tree trunk' finally accented but *ὅρμος* 'cord, chain' recessive? The evidence from the *Etymologicum Magnum* suggests that synchronic analysis of *κορμός* as a derivative of *κείρω* 'cut' may have been felt to be relatively straightforward, but that *ὅρμος* posed greater difficulties for synchronic analysis. The effect of synchronic unanalysability was perhaps sufficiently strong in the case of *ὄγμος* 'furrow' and *κόσμος* 'order; ornament; ruler' to override the very strong tendency for words terminating in *-γμο-* or *-σμο-* to be finally accented.

We saw in Chapter 10 that words with suffixes *-ρο-*, *-το-*, and *-νο-* shared certain accentual characteristics. In each case a group of typical words, i.e. adjectives, displayed almost consistent final accentuation whereas a group of atypical words, i.e. nouns, was split between final and recessive accentuation. In the case of nouns with *-μο-*, the most typical words again have final accentuation whereas the less typical words are split between final and recessive accentuation. The factors that make a word with *-μο-* typical are, however, not the same as those that make a word with *-ρο-*, *-το-*, or *-νο-* typical. Characteristics making

a word typical of derivatives with *-μο-* include certain terminations (especially *-γμο-*, *-θμο-*, and *-σμο-*), abstract meaning, and formal synchronic transparency of derivation.

The accentual pattern found in derivatives with *-μο-* can be explained on a principle similar to that proposed for derivatives with *-ρο-*, *-το-*, and *-νο-*, and applying with some additional complications to words with suffix *-λο-*. The suffix *-μο-* is an inherently accented suffix, and words that are synchronically analysed as containing this suffix are finally accented. Some words that, historically speaking, were formed with *-μο-* have in one way or another become atypical of *-μο-* derivatives and their element *-μο-* has ceased to be analysed synchronically as a suffix. As we have seen for various other kinds of derivatives, a possible, but not inevitable, consequence of this 'demorphologization' is the loss of a non-default accent and its replacement with the default accent for the language.

12 COMPLEX CALAND FORMATIONS

12.1 Introduction

So far, I have argued that various suffixes (*-ρο-*, *-το-*, *-νο-*, *-λο-*, and *-μο-*) have an inherent or lexical accent,[1] but that a stem formed with one of these suffixes may come to be treated synchronically as monomorphemic if, for some formal or functional reason, the word loses its connection with a synchronically clear category of words containing the suffix. A further consequence of this process is, in some cases, a change to recessive accentuation. In general, we found that inherently accented suffixes that are fundamentally adjectival tend to retain their morphemic identity, and therefore their characteristic accent, in words that function synchronically as adjectives. *Nouns* formed with adjectival suffixes, on the other hand, often acquire recessive accentuation.

Some exceptions to this general rule have, however, been noticed along the way. Most strikingly, adjectives with a suffix *-λο-* by no means display almost consistent final accentuation; as suggested earlier, a possible reason is that this suffix had begun to lose its synchronic identity even in adjectives (pp. 236–7). But there are also recessive adjectives among the words with *-ρο-* and *-νο-*. Almost all adjectives formed with *-ρο-* are finally accented, but the following 14 are recessive:[2]

φάλᾱρος 'having a patch of white'[3]
λάβρος 'furious, boisterous'
χείμερος 'wintry'
νύκτερος 'nightly'
λῆρος 'silly'
ἄκρος 'at the furthest point'
γαῦρος 'exulting in, boastful'
παῦρος 'small'
ἀήσυρος 'light as air'

[1] We are not concerned here with the suffix *-το-* found on nouns with *o*-grade root (*φόρτος* 'load') or CVRV root (*θάνατος* 'death'), or with the suffix *-ανο-* that forms neuter nouns (*δρέπανον* 'sickle'), or with the suffixes *-ιλο-* and *-υλο-* (see pp. 186–7, 203, Ch. 9). The accentual facts suggest that these suffixes were synchronically distinct from inherently accented *-το-*, *-νο-*, and *-λο-* (see pp. 233–6, 236–7).

[2] I omit from discussion here those adjectives with *-ρο-* whose accentuation is uncertain.

[3] I ignore the final accentuation that this word has in the Hesychius manuscript (see Hesychius *φ* 96, 97 Schmidt, and Schmidt ad loc.; cf. p. 4).

μόχθηρος 'wretched' (non-Attic μοχθηρός)[4]
πόνηρος (non-Attic πονηρός) 'base'
? πῆρος 'disabled, blind' (non-Attic πηρός)[5]
βδέλυρος (non-Attic βδελυρός) 'disgusting'[6]
? μῶρος 'dull, stupid' (non-Attic μωρός)[7]

For some of these words, grammarians tell us that recessive accentuation is a peculiarity of the Attic dialect; in these cases the non-Attic form is noted above in parentheses. For completeness I include in this list (with question marks) two words whose etymology is unclear, since they fit into a pattern exemplified by several others that definitely contain a suffix -ρο-.

Although adjectives with -νο- are generally accented on the final syllable, we find consistent recessive accentuation in the large category of adjectives of material with -ινο-, and in many adjectives ending in -ινο- that do not exactly denote material. The latter often mean 'like (some object) in colour or shape' (so καλάϊνος, γιγγράϊνος below), but they may also have more general adjectival semantics (so καννάβινος below). Sometimes they are formed to a base in which -ι- already features (so καλάϊνος below). The type may be illustrated by the following examples:

λᾱ́ϊνος 'of stone' (λᾶας, gen. λᾶος 'stone')
καλάϊνος 'like the κάλαϊς, shifting between blue and green' (κάλαϊς, gen. καλάϊδος 'precious stone of a greenish blue')

[4] Eust. (341. 14–20) and Arc. (81. 17–20) suggest that recessive accentuation of μόχθηρος and πόνηρος is found only in Attic, and they and Ammonius (405) also report a tradition that in Attic different meanings of these words were associated with the different accentuations. Trypho (in Ammonius 405 = Trypho fr. 15 Velsen) disagrees vigorously with this, saying that the Athenians pronounce the words recessively not to distinguish different meanings but because they like recessive accents.

[5] Sch. *Il.* 2. 599b (A), quoted on p. 78, says that the word is finally accented in Homer but recessive in Attic. Hesychius (π 2227 Schmidt) attributes different meanings to the different accentuations.

[6] Eust. (341. 14) says that the Athenians give the word a recessive accent. I do not understand Schwyzer's assertion (1953: 383) that βδελυρός is finally accented in Attic and recessive in the Koine.

[7] According to Arc. (79. 12), the recessive accentuation is Attic. Eust. (245. 37–8) says that μῶρος was the Attic accentuation whereas μωρός arose παρὰ τοῖς ὕστερον 'with later people'. At 1749. 37 he asserts that Homer knew only the recessive accentuation, since the final accentuation arose later. This is consistent with his view in the earlier passage that the difference between the accentuation of Attic and that of the Koine was a matter of chronology. At 1447. 56 he says that μωρος 'stupid' was recessively accented πάλαι ποτέ 'some long time ago' and quotes two examples of its use from 5th-cent. BC Attic drama to illustrate: Sophocles, *El.* 1326 and Aristophanes, *Av.* 1238 (cf. Eust. 1749. 39). It is perhaps significant that in both lines the case in which the word occurs is the vocative (see below). Photius (μ 651 Theodoridis) says that some distinguished different meanings by the different accentuations.

ἐλᾱ́ϊνος 'of olive-wood' (ἐλαία, Attic ἐλᾱ́ᾱ 'olive-tree')
κρανάϊνος 'made of the wood of the cornelian cherry' (κράνεια 'cornelian cherry')
γιγγράϊνος 'like the γίγγρας' (γίγγρας 'small Phoenician flute or fife')
καννάβινος 'of or for a block-figure' (κάνναβος *wooden framework round which artists moulded wax or clay*, 'block-figure')
ὀρόβινος 'made of ὄροβος' (ὄροβος 'bitter vetch')
μολύβινος 'leaden' (μόλυβος 'lead')
etc.

Some adjectives with *-ινο-* are finally accented, but these never have the semantics of adjectives of material. Very often they express a temporal notion (ἐχθιζινός, ἑωθινός below) or a spatial one (ἀδινός, ῥαδινός, πυκινός below):

ἀδινός 'close, crowded'
ῥαδινός 'slender'[8]
ἐχθιζινός 'of yesterday'
ἑωθινός 'in the morning, early'
πυκινός 'close, compact'
etc.

A smaller group of adjectives in *-υνο-* and *-συνο-* again displays consistent recessive accentuation:

σχέδυνος 'tenacious'
πίσυνος 'trusting in, relying on'
ταρβόσυνος 'affrighted; affrighting'
κηδόσυνος 'anxious'
γηθόσυνος 'joyful, glad'
δουλόσυνος 'enslaved'
χαρμόσυνος 'joyful, glad'
? ἱππόσυνος 'of a horse or horses'[9]
δεσπόσυνος 'of or belonging to the master or lord'
ἑταιρόσυνος 'friendly'
κουρόσυνος 'youthful'
γειτόσυνος 'neighbouring'
μαντόσυνος 'oracular'
θάρσυνος 'daring'
perhaps also to be grouped with these is a recessive adjective ending in *-αυνος*:
χαῦνος 'porous, spongy, loose'

[8] Built on the root of περι-ρρηδής 'sprawling', according to Risch (1974: 99).
[9] If ἱπποσύνᾱ at Euripides, *Or.* 1392 is a form of an adjective ἱππόσυνος rather than of a noun ἱπποσύνη; see Sch. Eur. *Or.* 1391.

The only other recessive adjectives with *-νο-* are the following:[10]

κάγκανος 'dry'
λάγνος 'lecherous, lustful'
μόρφνος epithet of an eagle
λίχνος 'gluttonous'
γρῶνος 'eaten out'
φῶνος 'loud-voiced'

We saw in the previous chapter that the suffix *-μο-* is mainly productive in Greek for forming nouns, and these are usually accented on the final syllable. In the parent language, the suffix also formed adjectives. In Greek, simple *-μο-* did not productively form adjectives, but the few survivals of the type are finally accented:

θερμός 'warm' (≈ Skt *gharmá-* m. 'heat')
δοχμός 'slantwise' (? = Skt *jihmá-* 'oblique'[11])
possibly *ὠμός* 'raw' (= Skt *āmá-* 'raw, uncooked'), if *-μο-* is historically a suffix here (cf. p. 239)
possibly *γυμνός* 'naked' (= Skt *nagná-* 'naked'; see Table 8(a) note c)

On the other hand, Greek has a large number of adjectives in *-ιμο-* and *-αλιμο-*, and these are consistently recessive:

ἁρπάγιμος 'ravished, stolen'
φαίδιμος 'shining, radiant'
ἄλκιμος 'stout, brave'
εἰδάλιμος 'shapely'
κῡδάλιμος 'glorious'
etc.

There are also a few adjectives in *-υμο-*, again recessive:

(ν)ήδυμος 'sweet, pleasant'[12]
δίδυμος 'double, twofold'
ἔλυμος 'curved/stringed instrument' (unclear whether adj. or noun)
ἔτυμος 'true'
ἐτήτυμος 'true'

For some of the recessive adjectives mentioned above, the accent is to be explained as the result of a relatively idiosyncratic property of the

[10] I omit from discussion here those adjectives with *-νο-* whose accentuation is uncertain.

[11] On this correspondence see the bibliography cited at Table 11(a) note f.

[12] The form *νήδυμος* was created out of *ἤδυμος* and preceding *-ν* by false segmentation in Homeric epic: see Leumann (1950: 44–5).

particular word. The -ρο- adjectives for which we are told that Attic had a recessive accent while the Koine had a final accent (βδέλυρος/βδελυρός 'disgusting', μόχθηρος/μοχθηρός 'wretched', μῶρος/μωρός 'dull, stupid', πῆρος/πηρός 'disabled, blind', πόνηρος/πονηρός 'base') are all, or can all be, insults. It has been plausibly suggested that for these Attic generalized a recessive accent from an original recessive vocative, the vocative being a frequently used and therefore salient case for insults (Schwyzer 1953: 380, 383).[13]

Beside the adjective ἄκρος 'at the furthest point' there exist the following nouns: neuter ἄκρον, feminine ἄκρᾱ, masculine ακρος (Schwyzer, *DGE* 664. 21) 'highest or furthest point'. Frisk (1938) argues plausibly that the use of ἄκρος as a noun was prior (although not necessarily in the masculine gender) to its use as an adjective (cf. p. 158). Frisk's argument is based on the semantic peculiarities of the adjective. Although in a phrase such as ἄκρος πούς, the word ἄκρος is syntactically an adjective agreeing with πούς, the phrase means not 'pointed foot' (*vel sim.*) but 'furthest point of the foot'. Frisk regards this interpretation as resulting from a situation in which ἄκρος, or rather ἄκρᾱ or ἄκρον, was a noun standing in apposition to another noun: ἄκρᾱ χείρ 'extremity, hand' came to mean 'furthest point of the hand'. Vine (2002: 335) suggests that the earliest form was an old collective continued by the feminine ἄκρᾱ (cf. p. 158). If the feminine noun ἄκρᾱ is indeed earlier than the adjective ἄκρος, the most obvious mechanism for the creation of ἄκρος would be the reinterpretation of ἄκρᾱ when used in apposition to a feminine noun as the feminine form of an adjective; a masculine form ἄκρος and neuter ἄκρον would then have been created alongside the feminine ἄκρᾱ and would have retained the somewhat substantival function of ἄκρᾱ despite their syntactic behaviour as adjectives. If so, the recessive accent of the adjective would be unsurprising for a back-formation from a recessive 'feminine form'.

The word λῆρος is used from Eupolis on as a noun meaning 'trash; idle talk' and not until Lucian as an adjective meaning 'silly' (see pp. 324, 335). It is possible that adjectival uses such as Lucian's λῆρον . . . ποιητήν 'silly poet' (*Gall.* 6) should be interpreted, at least historically, as sequences of two nouns in apposition. In this case we would have

[13] According to Göttling (1835: 304–5), the manuscripts of Aristophanes regularly have recessive accentuation for the vocatives μόχθηρε and πόνηρε but final accentuation for the other cases of these adjectives. I have checked this assertion for codex Ravennas 137, 4, A by consulting the facsimile edition and found the convention to be followed almost consistently. If this convention reflects a genuine tradition—and it would be difficult to explain otherwise—, we would have direct evidence for the assumed paradigm in which the vocative is recessive and the other cases finally accented. As regards πῆρος, the vocative is unattested. The word is rare in all cases, however, so the non-attestation of the vocative may be accidental.

another example of the rare development from noun to adjective rather than vice versa. The recessive accent would again be unsurprising for a noun.

The easiest historical analysis of *νύκτερος* 'by night' is that the word contains the stem *νυκτ-* of *νύξ*, gen. *νυκτός* 'night', plus suffixes *-ϵ-ρο-* (compare *φαν-ϵ-ρό-ς* 'visible, manifest'; *κρατ-ϵ-ρός* 'strong'). Synchronically, however, the word is likely to have been analysed as containing the suffix *-τερο-*, which formed comparatives and contrastives. This suffix was inherently unaccented: comparatives and contrastives in *-τερο-* have recessive accents (with the exceptions of *ἀριστερός* 'left' and *δεξιτερός* 'right').[14]

The poetic word *φάληρος* (Doric *φάλᾱρος*) 'having a crest or patch of white' may have been thought related to the obscure Homeric compound *τετραφάληρος*, an adjective qualifying *κυνέη* 'helmet' or *κόρυς* 'helmet', and if so the influence of *τετραφάληρος* could have resulted in the assignment of a recessive accent to *φάληρος*, as in the compound. The adjectives *χείμερος* 'wintry' and *φῶνος* 'loud-voiced' are likely have been extracted from compounds such as *δυσ-χείμερος* 'terribly wintry' and *μεγαλό-φωνος* 'loud-voiced'.[15] It is, perhaps, not obvious *a priori* that a word extracted from a recessive compound, or secondarily associated with a recessive compound, should necessarily receive recessive accentuation, but the three words *φάληρος*, *χείμερος*, and *φῶνος*, taken together, provide at least some mutual support for the possibility of recessive accentuation under these circumstances.

If *κάγκανος* 'dry' is correctly regarded as related to Lithuanian *keñkti* 'cause pain' (see Frisk 1960–72: i. 750–1; Fraenkel 1962: 240), the suffix would be *-(ᾰ)νο-*. Synchronically, however, the word has the appearance of a totally reduplicated formation such as *βάρβαρος* 'non-Greek' or *μέρμερος* 'baneful'. Such formations are to be segmented *βάρ-βαρ-ο-ς*, *μέρ-μερ-ο-ς*, etc., and are regularly recessive. Even if

[14] The original segmentation of *ἀριστερός* may well be *ἀριστ-ερό-ς*, and its surprising accentuation may be connected with such an origin. If so, the accentuation of the antonym *δεξιτερός* will be due to the influence of *ἀριστερός*; in any case, one of these two words has in some way influenced the other. It is possible that *νύκτερος* 'by night' was historically a contrastive in *-τερο-*. The outcome of **νύκτ-τερο-ς* might well have been **νύκτερος*, but reliable evidence for the Greek treatment of original **-$k^{(w)}$-tt-* clusters is (as far as I know) lacking.

[15] For the decompositional formation of *χείμερος* 'wintry', see Frisk (1960–72: ii. 1080); cf. García-Ramón (1992: 198). The simplex *φῶνος* is used only by Eupolis (in Sch. Ar. *Av.* 42a = Eupolis fr. 309 K–A) and by Theognost. (66. 17), whereas *-φωνος* as the second member of a compound was, as Frisk says (1960–72: ii. 1058), 'unbeschränkt produktiv'. This distribution and the possessive relationship expressed by *φῶνος* (to be expected in a *bahuvrīhi* compound rather than a simplex) speak for back-formation of the simplex from the compounds.

κάγκανος did not belong to the reduplicated type historically, it could have been assimilated to it synchronically.

Schwyzer (1953: 489) suggests, rather obscurely, that the recessive accent of λάγνος 'lecherous, lustful' and λίχνος 'gluttonous' is due to the recessive accent of (some) substantivized adjectives with -νο-. Both words fulfil Lobeck's (1837: 329) criteria for adjectives to be capable of 'natural' substantivization (the first of two types of substantivization he discusses):

> Priori generi subjecta sunt, quae rei significatae vel unice vel prae ceteris conveniunt, primum humanarum actionum vocabula, γεωργός, κυνηγός, γαμετή, quae addito substantivo nihilo clariora fiunt quam omisso; deinde omnia, quae de una tantummodo re praedicari possunt . . .
>
> Falling under the first type are words that are appropriate either only to the thing signified or to that more than to other things, firstly words for human activities—γεωργός ['farming'/'farmer'], κυνηγός ['hunting'/'hunter'], γαμετή ['married'/'wife']—, which become no clearer by the addition of a noun than they are without it; then all words that can be predicated of only one thing . . .

The term λάγνος, as LSJ point out (s.v.), is properly applied to males. A feminine is attested in Anaxandrides (fr. 61. 2 K–A), but this gender was so rare that Herodian could state that the word had no feminine form (Arc. 70. 11–12). Herodian took this lack of a feminine to be related to the word's recessive accentuation. The word was on the way to becoming a noun meaning 'lewd man', and this incipient substantivization may have contributed to its losing the accent of the adjectival suffix -νο-. Similar factors may be responsible for the recessive accent of λίχνος 'gluttonous'. The word applied particularly to people, and at Plato, *R.* 354b we find attested a substantival use with the article, οἱ λίχνοι 'gluttons'.

At *Il.* 24. 316 and Hesiod, *Scutum* 134, the word μόρφνος, which is applied to an eagle, could be taken either as an adjective or as a noun in apposition to another noun. The word is thought to be a colour term in origin, perhaps related to Lithuanian *márgas* 'colourful' (see Frisk 1960–72: ii. 258; Risch 1974: 98). The word was, however, taken to be a noun in the fourth and third centuries BC (see Aristotle, *HA* $618^{b}25$ and Lycophron, *Al.* 838). The recessive accentuation transmitted for μόρφνος is consistent with the view that the word was a noun, whether or not that view was correct for Homer and Hesiod.[16]

We are left with the following recessive adjectives and groups of recessive adjectives:

[16] Some MSS at *Il.* 24. 316 have μορφνόν, although the grammatical tradition and the textual tradition as a whole favour μόρφνον (see West's apparatus ad loc. and p. 356 s.v. μόρφνος); the finally accented variant can be due equally easily to the alternative possibility of taking this obscure word as an adjective here.

λάβρος 'furious, boisterous'
γαῦρος 'exulting in, boastful'
παῦρος 'small'
ἀήσυρος 'light as air'
γρῶνος 'eaten out'

adjectives of material (*vel sim.*) in -ινο-
adjectives in -υνο-
adjectives in -ιμο-
adjectives in -υμο-

I have no explanation for the accentuation of λάβρος and γρῶνος and shall have nothing further to say on these words. We shall return to γαῦρος, παῦρος, and ἀήσυρος, but first let us consider the whole categories of recessive adjectives in -ινο-, -υνο-, -ιμο-, and -υμο-.

The explanations given for the groups of words with apparently aberrant recessive accentuation studied in previous chapters rely on the notion that words with non-recessive accentuation may under some circumstances replace this accentuation with a recessive accent (the 'default' accent for the language). Groups of words to which this procedure typically applies include adjectives (with inherently accented adjectival suffixes) that have become nouns, abstract nouns (with suitable suffixes[17]) that have become concrete, and words that have become synchronically unanalysable for formal reasons. These groups of words are characterized not by consistent recessive accentuation but by being split between two different accentual types, some of them retaining the original accent for the category while others have acquired a (default) recessive accent. An explanation along these lines will not readily account for the accentuation of the adjectives in -ιμο-, -ινο-, -υμο-, and -υνο-, which are characterized by absolutely consistent recessive accentuation (for -ινο- in so far as we are dealing with the adjective-of-material suffix).

Synchronically, it is easy enough to say that -ιμο- and -υμο- were distinct suffixes from simple -μο- (and from other complex suffixes including -γμο-, such as -γμο-) and that they were inherently unaccented, and that similarly -υνο- and the adjective-of-material suffix -ινο- were distinct suffixes from simple -νο- (and from -εινο-, etc.) and that they too were inherently unaccented. Such a synchronic account seems correct and adequate. But a historical problem arises. We would like to know the origin of the -μο- in -ιμο- and -υμο-, and of the -νο- in -ινο- and -υνο-. If the -μο- of -ιμο- had nothing historically to do with simple -μο-, and the -μο- of -υμο- also had nothing historically to do with simple -μο-,

[17] The suffix -μο- is the only abstract-forming suffix we have examined, but see also pp. 294–7.

and the *-νο-* of *-ινο-* and that of *-υνο-* had nothing historically to do with simple *-νο-*, there may be nothing to explain. But if historically the *-μο-* of *-ιμο-* is identical to simple *-μο-*, and so on, it is worth trying to explain how the differences in accentual behaviour came about.

The synchronic suffixes *-ιμο-*, *-υμο-*, *-ινο-*, and *-υνο-* have certain things in common. They are all disyllabic suffixes, the first syllable of each consisting of *-ι-* or *-υ-* and the second syllable consisting of *-μο-* or *-νο-*. All four logical possibilities for the combination of *-ι-* or *-υ-* with following *-μο-* or *-νο-* are represented, as if these suffixes are made out of an inventory of four elements, *-ι-*, *-υ-*, *-νο-*, and *-μο-*, which can be combined in various different ways.

These elements *-ι-*, *-υ-*, *-νο-*, and *-μο-* are reminiscent of the suffixes *-ι-*, *-υ-*, *-νο-*, and *-μο-* that belong to the Caland system of alternating suffixes (see p. 155), and I shall argue that they are precisely those suffixes. The complex suffixes *-ιμο-*, *-υμο-*, *-ινο-*, and *-υνο-* would then be made by a process of adding a Caland suffix to a stem already characterized by another Caland suffix.[18] Nussbaum (1976: e.g. 65) has called suffixes of this kind 'complex Caland suffixes', and I shall use this terminology.[19]

By no means all of our adjectives in *-ιμο-*, *-υμο-*, *-ινο-*, and *-υνο-* are built on roots that otherwise form Caland systems. The claim being made here is that these suffixes *originated* as complex Caland suffixes. This claim has been made before (mainly by Nussbaum 1976: 74–9) for the suffix of the Greek adjectives in *-ιμο-* and for that of at least some of those in *-υμο-* and *-υνο-*. Specht (1935: 226) saw 'Caland' *-ι-* in the adjective-of-material suffix *-ινο-*, but he has subsequently been ignored. The reason is perhaps that he also regarded the accented suffix *-ινό-* found in adjectives of time and place as containing the same 'Caland' *-ι-*, but was unable to explain the difference in accentuation between the two types. Subsequent scholars have connected accented *-ινό-* with the Caland system and kept the adjective-of-material suffix apart; I shall suggest that this may not be the correct solution to Specht's problem.

In the following sections the evidence for complex Caland origin is surveyed for each of our suffixes, along with other hypotheses that have been suggested.

[18] Nussbaum (1976: 65) raises the question whether complex Caland suffixes arose through contamination of different words each formed with a simple Caland suffix or through extension of one suffixed form with a further Caland suffix, and suggests that for specific cases the question is 'perhaps in principle unanswerable'.

[19] On complex Caland suffixes see also Meißner (1995: 65–9); the main focus of Meißner's discussion is on complex suffixes with an *s*-suffix as second part and so is not directly relevant here.

12.2 Formation of adjectives in -ιμο-

12.2.1 Arbenz's non-Caland hypothesis

Arbenz (1933: 7–10) argues that there are no plausible comparisons outside Greek for the adjectives in -ιμος, and that they are therefore likely to have arisen from some starting-point within Greek. He further argues (pp. 10–14) that these adjectives originated with the reinterpretation, within the Homeric tradition, of 'short forms' of compound personal names in -ιμος as adjectives. Both the 'short forms' of names and the -ιμος adjectives—and the possibility of a link between them—may be illustrated by the word ἄλκιμος 'stout, brave', which appears in Homer both as an adjective and as a short form of Ἀλκιμέδων.[20] There are, however, various difficulties with Arbenz's hypothesis. In particular, while adjectives can readily be employed as personal names, the use of personal names as adjectives is a far less common phenomenon. Arbenz (1933: 12–13) recognizes this problem and points out that in the Homeric tradition there is often some ambiguity between adjective and personal name, making the passage from one category to the other easier than it might otherwise be. A word such as γλαυκῶπις 'with flashing eyes' could be used as an adjective qualifying the name Ἀθήνη but could also denote Athena by itself. The potential therefore existed for a name standing alone, such as Ἄλκιμος, to be reinterpreted as an adjective. However, it is difficult to see such a restricted process of misinterpretation within the epic tradition as giving rise to a flourishing class of adjectives in classical and Hellenistic Greek.

12.2.2 Nussbaum's Caland hypothesis

Nussbaum (1976: 76–8) finds the following evidence for a complex Caland origin for the suffix -ιμο-. Firstly, a number of adjectives with -ιμο- are formed on roots for which Caland forms are otherwise attested. Nussbaum cites φαίδιμος 'shining' beside e.g. φαιδρός 'bright', Lithuanian *gaidrùs*; κῦδιμος 'glorious' beside e.g. κῡδι-άνειρα 'bringing men glory'; κάλλιμος 'beautiful' beside e.g. καλλίκομος 'with beautiful hair'. Secondly, he observes that although some Greek adjectives with -ιμο- have been added to a base ending in non-Caland -ι- (e.g. ἄγχιμος 'near' beside the adverb ἄγχι 'near'),

> a considerable number of examples of this -ιμος type seem to be conditioned by the fact that the -ι- which is extended by -μο- appears as the first member of a compound . . . whether that -ι- is a Caland -ι- (καλλί-κομος : κάλλιμος) or not ('Οψί-γονος "of late birth": ὄψιμος "late"). . . . If -i̯- in composition is a

[20] Arbenz's argument is accepted by Risch (1974: 105), rejected by Bader (1974: 2) and Nussbaum (1976: 123 n. 42). Favourable presentation by Meißner (1995: 35–6), although see his p. 35 n. 24. For further bibliography see Risch (1974: 105 n. 90).

conditioning factor in this formation, the Caland system cannot be entirely unrelated. (Nussbaum 1976: 77–8; cf. also Wackernagel 1897: 11)

The connection with compositional *-i-* indeed suggests a connection with the Caland system; the formation of adjectives such as *ὄψιμος* 'late' beside compounds with non-Caland *-i-* can be due simply to extension of the relationship between compositional *-i-* and *-ιμο-* adjective within Greek, once the differences between different kinds of compositional *-ι-* had ceased to be felt.

12.3 Formation of adjectives in *-υμο-*

The analysis of *ἥδυμος* 'sweet, pleasant'[21]—identified as a complex Caland formation by Nussbaum (1976: 78)—as *ἡδυ-* + *-μο-* (+ *-ς*) is very straightforward. The word would be an extension of the stem of the synonymous *u*-stem adjective *ἡδύς* 'sweet, pleasant' with the further adjectival suffix *-μο-*. An extensive Caland system is attested for the root of *ἡδύς*. Apart from this *u*-stem form itself, Greek has the *s*-stem *ἧδος* 'pleasure', the compositional *s*-stem in (*μελι-*)*ηδής* '(honey-)sweet' (Skt (*prá-*)*svādas-* '(very) pleasant'), the comparative suffix in *ἡδίων* 'more pleasant' (Skt *svā́dīyas-*), and the superlative suffix in *ἥδιστος* 'most pleasant' (Skt *svā́diṣṭha-*; cf. Risch 1974: 66).

The adjective *ἔτυμος* 'true' and its reduplicated variant *ἐτήτυμος* 'true' are probably also formed beside a *u*-stem adjective. Although the *u*-stem adjective does not survive as such, *ἐτεός* 'true' is likely to be a thematic extension of it (cf. Frisk 1960–72: i. 581). There is no other evidence for Caland forms on this root, but also very little further evidence for the root.

The *-υ-* of *δίδυμος* 'double, twofold' is that of the numeral *δύο* 'two' (see Frisk 1960–72: i. 387) while the *-υ-* of *ἕλυμος* 'curved' (if this is indeed an adjective) is that of *ἑλύω* 'roll round'. Neither of these is a Caland *-υ-*, yet the historical segmentation of *δίδυμος* and *ἕλυμος* as *δίδυ* + *μος* and *ἕλυ* + *μος* could well be an extension of a pattern involving the addition of *-μο-* to a stem ending in *-υ-*. The involvement of stems with non-Caland *-υ-* would be similar to the creation of an *-ιμο-* adjective such as *ὄψιμος* 'late' beside a compositional *-ι-* that did not originally have any connection to the Caland system, on the model of adjectives such as *κάλλιμος* 'beautiful' beside compositional *καλλι-*.

Nussbaum (1976: 78–9) finds two likely examples of **-umo-* within Caland systems outside Greek, one in Armenian *bazum* 'much', a borrowing from Iranian built on the *u*-stem of *παχύς* 'thick', and one in

[21] On Homeric *νήδυμος* see n. 12 above.

Tocharian A *orkäm*, B *orkamo* 'dark' (related to the Greek Caland forms ἔρεβος, τό 'place of nether darkness' and ἠρεμνός 'dark').[22]

For all of our Greek -υμο- adjectives, then, an analysis of the suffix into -υ- + -μο- is natural and obvious. One of the roots involved, that of ἤδυμος, is a good Caland root. The type of formation found in ἤδυμος finds some comparative support, and it is likely that this form or lost forms of the same type were the starting-point that gave rise in a few more (non-Caland) cases to the addition of -μο- to a synchronic stem ending in -υ-.

12.4 Formation of adjectives in -ινο-

In discussing complex Caland formations, Nussbaum (1976: 74–6) mentions various adjectives in *-*ino*-, including Greek πυκινός 'compact' and ἀδινός 'close, crowded' (for which see below), but does not mention the adjectives of material in -ινο- (cf. Wackernagel 1897: 11; Meißner 1995: 27). However, a case can be made for regarding these too as complex Caland formations, which in Specht's (1935: 226) opinion they were.[23] Firstly, there may be some comparative evidence for an adjective-of-material suffix *-*ino*- in Old Church Slavonic *želě-zĭnŭ* 'of iron', Old and dialectal Lithuanian *áuksinas* 'golden', and Latin *quernus* 'of oak', the latter perhaps from *$k^{w}erk\hat{i}nos$ (see Risch 1974: 100 with n. 86). If indeed these words provide some comparative support for such a suffix in Indo-European, the large proportion of already Homeric adjectives of material in -ινο- that are derived from nouns of non-Greek origin (e.g. βύβλινος 'of papyrus') would be secondary. Too much weight cannot be placed on this comparative material, however, because a suffix *-*ino*- was very productive in Balto-Slavonic and is by no means confined to words with the semantics of adjectives of material (see Vaillant 1974: 336–7), and because *$k^{w}erk\hat{i}nos$ is only one possible starting-point for Latin *quernus*.

More importantly, the adjective-of-material suffix -ινο- can be used to form derivatives to thematic nouns, and in this case the thematic vowel is dropped: cf. Greek φήγινος 'oaken' versus φηγός 'Valonia oak', Lithuanian *áuksinas* 'golden' versus *áuksas* 'gold'. Schindler (1976: 351) observed that a number of different Indo-European suffixes beginning with *-*i*- form derivatives to thematic nouns in which the *i*-suffix replaces the thematic vowel. For example, the suffix of the Sanskrit type *vṛ́kī*- f. 'she-wolf' < *$\hat{u}l̥k^{w}i$-H_2- derives feminine nouns to *o*-stem masculines, and the -*o*- is dropped. Schindler extended his

[22] On the difference in root vocalism between the Gk and Tocharian forms, see Nussbaum's detailed discussion (1976: 79–83).

[23] The terminology in which I describe Specht's views here is, however, anachronistic.

observation to 'numerous suffixes with the structure *-*iCo*- (*-*iH₂o*-, *-*ino*-, etc.) or *-*īCo*- (*-*īno*- etc.).' From the fact that non-*i*-suffixes preserve the thematic vowel he further suggested that in secondary derivatives *only* *i*-suffixes can replace the thematic vowel. We shall not be concerned here with the absolute correctness or incorrectness of this generalization, but we may accept the point that the substitution of another suffix for the thematic vowel is unusual, and that *i*-suffixes were particularly prone to this procedure. If the behaviour of various *i*-suffixes in this respect is not simply a coincidence, it ought to follow that the -*i*- of a suffix like -*ino*-, which replaces the thematic vowel, is in some way related or identical to the -*i*- of several other *i*-suffixes. In other words, at least from an early Indo-European point of view our adjective-of-material suffix is to be segmented -*i*- + -*no*-.[24]

Greek has another adjective-of-material suffix, -*ϵo*- < *-*eio*-, which competes with -*ιvo*- and eventually loses out to -*ιvo*-. It has been argued (most recently by Hajnal 1994, with further bibliography) that the adjective-of-material suffix *-*eio*- results from 'endocentric' (not meaning-changing) thematization of an original suffix **ei*/*i*, starting from the full-grade form **ei*. This thematization would have occurred in Greek, Indo-Iranian, Latin, and possibly Armenian, either independently or at a (possibly dialectal) Indo-European stage. Elsewhere in Indo-European, Hajnal (1994: 99–100) finds evidence for unextended *i*-stem forms with the semantics of adjectives of material (or substantivized adjectives of material).

The coincidence of there being two adjective-of-material suffixes each of which begins with an -*i*- (or -*ei*-) element leads to further suspicions that we are dealing with different extensions of an ablauting *i*-suffix, one starting from the zero-grade form and one from the

[24] One might wonder whether, alternatively, the replacement of the thematic vowel by *i*-suffixes could have resulted from a phonological loss of IE **o* or **e* before **i*/*i̯*. I have not assumed a phonological process of this kind, because IE **o* and **e* were clearly preserved before **i*/*i̯* in a number of contexts: for example, in the adjective-of-material suffix *-*eio*- ; in *i*-stem forms such as the ('proterodynamic') gen. sg. in *-*eis* or dat. sg. in **eiei*; in the thematic optative marker *-*oiH₁*-; in the present-formant *-*eie*-. However, Tucker (2004, esp. 559; 1990: 117–21, esp. 121 n. 159) raises the possibility that in IE the verbal present-forming suffix *-*i̯é*/*i̯ó*- replaced the thematic vowel, a pattern found in both Gk and Avestan and which she finds is likely to be an archaism in both branches. I have become aware of the relevance of this possibility at too late a stage to take it into proper consideration, but it may make a *phonological* loss of (unaccented?) **e* or **o* before at least **i̯* worth contemplating after all. If such a conclusion turned out to be justified I would still take the -*ι*- of our adjectives of material in -*ιvo*- to be in origin 'Caland' -*i*-, but the argument would rest on the likelihood that IE had an ablauting *i*-suffix that formed adjectives of material, and (more controversially) that 'Caland' -*i*- also originated as an ablauting *i*-suffix that formed adjectives; see further below.

full-grade form. Hajnal (1994: 100 n. 40) suggests in passing that this may be the case.[25]

Schindler (1976: 351) suggested the possibility that the *-i-* of such *i*-suffixes as **-iH₂o-*, **-ino-*, etc., which can replace the thematic vowel, was 'originally identical with the Caland-*i* that is substituted for **-ro-* etc. in the first member of compounds'. It is not immediately clear why there should be a connection with Caland systems. Since we are looking for an ablauting *i*-suffix that formed adjectives in Indo-European, however, the Caland suffix *-i-* is an attractive candidate if we can take the Hittite ablauting *i*-stem adjective *ḫarki-* 'white, bright', built on the Caland root of *ἀργός* 'white, swift' (< **H₂r̥ĝrós* = Skt *r̥jrá-* 'swift'; cf. e.g. *ἐν-αργής* 'visible, clear', *ἀργι-όδους* 'white-toothed'), to represent the original formation in which Caland *-i-* was found.[26]

There are at least two adjectives of material in *-ιvo-* for which we have other Caland forms on the same root, even if not a well-developed Caland system (but see below on *ἀργινο-*). Of the Homeric *-ινο-* adjectives whose bases have a known Indo-European etymology, one (*ἄνθινος*) exists beside an *s*-stem that is attested in both Greek and Sanskrit (*ἄνθος*, *τό* 'blossom' = Skt *ándhas-* n. *a herb*; 'Soma plant'). The base of *λᾶϊνος* 'of stone' is the originally neuter *s*-stem *λᾶας*, *ὁ* 'stone'.[27] Zero-grade stems in *-s* within Caland systems are identified by Nussbaum (1976: 44, 49), although *λᾶας* is not cited as an example, presumably because of the lack of evidence for further Caland forms on this root.

There are thus some reasons to believe that our recessive adjectives of material are in origin complex Caland formations. But this hypothesis raises the question of the finally accented adjectives in *-ινο-* : *ἄδινός* 'close, crowded', *ἐχθιζινός* 'of yesterday', etc. Nussbaum (1976: 75) identifies *πυκινός* 'compact' and *ἄδινός* 'close, crowded' as complex

[25] It is important not to confuse the complex suffix *-i-no-* being postulated here with the **-i-H₂-no-* for which Hajnal (1994: 101–5) argues at length on the basis of adjectives in various IE languages that reflect **-īno-*, with long *-ī-*. If both **-i-no-* and **-i-H₂-no-* are valid reconstructions of adjective-of-material suffixes, they would differ in that the second has been extended with **-H₂-* before being extended with **-no-*. Hajnal regards the **-H₂-* of **-i-H₂-no-* as the IE collective marker.

[26] For a recent survey of the debate over the origin of 'Caland *-i-* ', with arguments in favour of regarding the adjectival type of Hitt. *ḫarki-* as the original location of the suffix, see Meißner (1998: 240–3). It is not clear to me whether a process in which 'Caland' *-i-* replaced the thematic vowel would belong to a more recent chronological layer from one in which this *-i-* behaved more properly as a Caland suffix, forming derivatives to Caland roots and found in alternation with other Caland suffixes. Any answer must depend on the ultimate relationship between thematic formations and Caland systems.

[27] The exact pre-form is uncertain; see Frisk (1960–72: ii. 65–6), with further bibliography.

Caland formations because both are formed on roots for which Caland forms are otherwise attested (πυκι-μηδής 'shrewd', πυκνός 'compact'; ἁδρός 'solid'; and perhaps ἄδος 'satiety, loathing' at *Il.* 11. 88 if this is an *s*-stem and not an *o*-stem). However, one of these links between finally accented adjectives in *-ινο-* and Caland systems is weakened by Vine's observation that ἁδινός 'close, crowded', along with the other members of its 'Caland' system, is built on an extended root $*sH_2$*-d-* found only in Greek (1998: 26 n. 57). He regards the whole set as created within Greek—perhaps ultimately on the basis of the adverb ἄδην/ἆδην 'sufficiently', an old accusative of a first-declension noun *ἆδη that would not in itself be a typical member of an old 'Caland' system.

Moreover, the spatial or temporal meaning that most of these finally accented *-ινο-* adjectives have makes it likely that, as is sometimes suggested, the *-ι* was originally the locative singular ending.[28] The locative case as such was lost in Greek, but a number of old locatives in *-ι* survived as spatial or temporal adverbs. The finally accented *-ινο-* suffix looks as if it started in adjectives derived from such adverbs by means of the adjectival suffix *-νο-*. In two cases we have both a finally accented adjective in *-ινο-* and an adverb in *-ι*, although in both cases the adjective is first attested too late to be a likely origin of the type:[29]

ὀψινός 'late' (Apollonius Dyscolus +; cf. Aeolic ὄψι 'after a long time, at length, late')
πρωϊνός 'early' (Septuagint +; cf. πρωΐ 'early in the day, at morn')

As Wackernagel suggests (1916: 105 n. 1), confirmation of a connection with the locative appears to come from the form ἑωθινός 'in the morning, early', where the Greek 'locative' formant *-θι* takes the place of the Indo-European locative ending *-ι*.[30]

Similar formations in *-*ino-*, with similar semantics, have been seen outside Greek in Latin *uērnus* 'of spring', *hībernus* 'of winter', *hornus* 'of this year', *hesternus* 'of yesterday', *uesperna* 'evening meal', and in Avestan *rapiθβina-* 'part of the day from noon till afternoon' (cf. *rapiθβā-* 'midday'), *uzaiieirina-* 'part of the day from afternoon till

[28] See e.g. Brugmann (1906: 270–1); Wackernagel (1916: 105 n. 1); Risch (1974: 101); cf. also Hajnal (1994: 101 n. 40).

[29] However, a personal name Ὄψινος occurs in Hellenistic inscriptions from Eretria, and Bechtel (1913: 151) suggests that an old adjective ὀψινός survived in Ionic while being lost in Attic, to find its way into the Koine from Ionic (cf. Wackernagel 1916: 105 n. 1).

[30] Wackernagel suggests, in fact, that the actual base for the derivation of ἑωθινός is not a form with *-θι* (despite the existence of Homeric ἠῶθι 'at dawn', which he regards as a purely poetic formation) but the adverb ἔωθεν which, despite the 'ablatival' sense of *-θεν*, effectively means 'at dawn'. It seems to me that both ἔωθεν and the existence of a locatival element *-θι* could have played a role in the creation of ἑωθινός, and that in either case the word is formed on the basis of Greek 'locatival' material.

sunset' (cf. *uz-aiiara-* 'end of the day'), *ušahina-* 'part of the day from midnight till sunrise' (cf. *ušah-* 'dawn'), and *hąmina-* 'of summer' (cf. *ham-* 'summer').[31] These comparisons suggest the possibility of an Indo-European origin for the type. Such an Indo-European origin would be compatible with a delocatival formation,[32] especially if its starting-point within Indo-European was restricted to one or two adjectives based on locatives that had become fossilized already in the parent language. The type is not very widespread within Indo-European and has clearly been extended within the attested histories of the languages where it is found. In Greek the finally accented adjectives in *-ινό-* often replace earlier words of different formations: so χειμερινός is attested from the fifth century BC for Homeric χειμέριος and δυσχείμερος; περυσινός appears in the fourth century BC for the archaic term ἔνος[33] (see Wackernagel 1916: 104–5 n. 1; Schwyzer 1953: 490, both with further details). The best lexical correspondence across different languages is that of Greek (and already Homeric[34])

[31] See Brugmann (1906: 270–1); Wackernagel (1916: 104 n. 1); Vaan (2003: 209–10), who adds also *vīspaiieirina-* 'of all day', restored by Benveniste (1964) at Yasna 19. 17. Benveniste himself assumes (1964: 13), with Debrunner (1954: 430–1), that the suffix of these Avestan adjectives was originally *-īna-*, as in the Vedic spatial adjective *añjasína-* 'going straight on' and temporal *parivatsarína-* 'relating to a full year', *saṃvatsarína-* 'yearly', and *prāvṛṣína-* '(day) beginning the rainy season' (with some similar examples in post-Vedic Skt), and unrelated to that of the Gk adjectives in *-ινό-*. A correspondence between Skt *-ī-* and Avestan *-i-* could arise next to a nasal on Hoffmann's hypothesis that inherited contrasts in vowel quantity had been replaced in Avestan by contrasts in vowel quality, with phonetic processes of vowel opening or closure in certain environments (1971: 68). However, Vaan's (2003) study of developments in the Avestan vowel system suggests that the distinctions in writing between *a* and *ā*, *i* and *ī*, etc. reflect distinctions of vowel length at the time the Avestan script was created, and that the etymological vowel quantity is preserved in the majority of cases, with the exception of certain environments in which phonetic lengthenings or shortenings occurred (which are not applicable here), and with the exception of some changes due to analogy (which it would be difficult to invoke here); on Hoffmann's hypothesis see esp. Vaan (2003: 610–11). In addition, Renou (1961: 255) suggested that the above-mentioned Skt adjectives in *-īna-* (*/-īna-*) were inspired by those in *-c-īna* such as *pratīc-īná-/pratīc-ína-* 'turned towards', extensions in *-īna-* of the directional adjectives in *-a(ñ)c-* and built on the zero grade of the element *-a(ñ)c-*. If so, the directional meaning of *añjasína-*, transferred to time in *parivatsarína-* etc., would be due originally to the directional meaning of *-a(ñ)c-*, not to the semantics of the suffix *-īna-*, which also served more generally as an adjective-forming suffix in Vedic and later Skt (cf. Debrunner 1954: 430). If the specifically spatial or temporal use of the Skt suffix *-īna-* were indeed due to a development within Skt, a connection with the Avestan temporal adjectives in *-ina-* would cease to seem especially likely even if the phonological difficulties might be surmountable.

[32] Other possible delocatival formations have been suggested for IE; see, for example, Nussbaum (1986: 235–8, 242–4); García-Ramón (1992: 191–2); Meißner (1998: 241).

[33] Mycenaean *pe-ru-si-nu-wo* is formed slightly differently.

[34] In Homer with metrical lengthening to εἰαρινός.

ἐαρινός 'of spring' : Latin *uērnus* 'of spring',[35] built on the root of Greek ἔαρ, Latin *uēr* 'spring', in origin an *r*/*n*-stem (see Frisk 1960–72: i. 433) and not a formation with 'Caland' system connections. The root of ἑωθινός 'in the morning, early', first attested in the fifth century BC, also matches that of Avestan *ušahina-* 'part of the day from midnight till sunrise', raising the possibility that ἑωθινός is actually a replacement for an earlier form built on the Indo-European locative in *-*i*. The early Ionic continuation of this locative is attested in Homeric ἠοῖ/ἠόϊ (used most often in the formula ἅμ' ἠοῖ φαινομένηφι(ν) 'at the appearance of the dawn', and always resolvable into ἠόϊ); in early Ionic an -(ι)-νός adjective on this base should have had the form *ἠοϊνός. Wackernagel (1916: 105 n. 1) suggests rather that ἑωθινός is a replacement for Homeric and Ionic ἠοῖος, Attic ἑῷος 'of the morning, toward the dawn, eastern', but the existence of ἠοῖος does not preclude an old *ἠοϊνός.[36] However this may be, the animate *s*-stem noun declension of the word for 'dawn' appears to have been rare already in Indo-European (see Sihler 1995: 308–10); the already peculiar declension of the word at such an early date makes its locative a particularly good candidate for fossilization already in the parent language.

To proceed to further examples of possible complex Caland formations, Nussbaum (1976: 74–6) identifies six complex Caland forms with *-*ino-* outside Greek: Lithuanian *krùvinas* = Old Church Slavonic *krŭvĭnŭ* 'bloody'; Avestan *saocina-* 'bright', *zairina-* 'weakening', and *tacina-* 'running, flowing'; Old Church Slavonic *tĭmĭnŭ* 'dark'; Armenian *erkayn* 'long (spatially)'. It is, however, difficult to use these forms as evidence for our question. In Avestan *saocina-* and *tacina-* the Avestan *-i-* occurs between a palatal consonant and *-n-*, an environment in which it may represent Indo-Iranian *-a-* ; this is certainly the explanation of the form *tacina* (for which spellings with *-can-* as well as *-cin-* are attested in compounds).[37] In addition, Elizabeth Tucker suggests to me that *zairina-*, which occurs only as the epithet of a demon, may be a textual corruption for **zarana-* 'wasting', under the influence of the very common *zairi-*, *zairita-* 'yellow'. The Balto-Slavonic forms require caution because of the general productivity of *-*ino-* as an

[35] Also compared to Lith. *vasarìnis* 'of summer', with a slightly different suffix *-*inio-* also seen in Lith. *vakarìnis* 'of evening' (see Brugmann 1906: 270–1; Wackernagel 1916: 104 n. 1; Frisk 1960–72: i. 433).

[36] It is tempting to wonder whether the two Homeric occurrences of ἠοῖος (ἠοίην at *Od.* 4. 447 and ἠοίων at *Od.* 8. 29, resolvable into ἠοΐην and ἠοΐων respectively) could even conceal precisely *ἠοϊνήν, *ἠοϊνῶν. If so, Attic-Ionic quantitative metathesis should have given rise to a form such as (in Attic) *ἑῳνός, which would have been less clearly recognizable as an adjective in -ινός. At such a stage both simplification to ἑῷος and recharacterization to ἑωθινός would be possible.

[37] See Vaan (2003: 471–2 with nn. 579, 580). I am very grateful to Elizabeth Tucker for drawing my attention to these facts.

adjectival suffix in Balto-Slavonic (cf. p. 270 and Vaillant 1974: 336–7). It may or may not be significant that the forms which do occur on Caland roots, Lithuanian *krùvinas* = Old Church Slavonic *krŭvĭnŭ* 'bloody' and Old Church Slavonic *tĭmĭnŭ* 'dark' (the former presumably old at least within Balto-Slavonic because of the lexical correspondence between Baltic and Slavonic), have meanings that would fit well with those of the Greek adjectives of material (which can denote colour as well as strictly material: see p. 260). Armenian *erkayn* has the spatial meaning typical of some of the Greek finally accented adjectives in *-ινο-*, but the formation and etymology of this form (together with related *erkar* 'long') are controversial, while *-ayn*, like Balto-Slavonic **-ino-*, occurs otherwise as an Armenian adjectival suffix with more general adjectival semantics (see Clackson 1994: 112–15).

Nussbaum identifies one further Greek form with complex Caland *-ino-*, the *ἀργινο-* not attested as such but forming the base for the derivation of *ἀργινόεις* 'bright, white'. Caland forms for this root are particularly well attested; it is perhaps the most famous Caland root of all (cf. p. 272). Since *ἀργινο-* is unattested as such, we cannot know too precisely what it meant, but the meaning of the derivative *ἀργινόεις*, as well as the basic meaning of the root **H_2ŕĝ-* 'bright', make *ἀργινο-* highly unlikely to have fitted semantically with the finally accented adjectives in *-ινο-* and much more likely to have belonged to the recessive type. If so, we would have one very good case of recessive *-ινο-* within a Caland system.

12.5 Formation of adjectives in *-ννο-*

The word *θάρσυνος* 'daring' is most naturally analysed as a derivative in *-νο-* on the stem of *θρασύς* 'bold' (Schwyzer 1953: 491; Schulze 1910: 801 n. 4; Szemerényi 1964: 86).[38] Nussbaum (1976: 76) identifies the form as a complex Caland formation. Further Caland formations on the same root include the compositional *i*-stem in *Θερσί-λοχος* and the *s*-stem *θάρσος* 'boldness', also attested in the form *θράσος* at *Il.* 14. 416 (see Risch 1974: 66).

However, the termination *-συνο-* is reminiscent of those words in which *-συνο-* is a suffix, e.g. *γηθόσυνος* 'joyful, glad'. The similarity here has given rise to the view that *θάρσυνος* 'daring' was created by

[38] The alternation *-αρ-* versus *-ρα-* (different treatments of original **r̥*) need not disprove derivation of *θάρσυνος* from *θρασύς* (*contra* Wyss 1954: 15), since *θάρσυνος* could either have been formed before the elimination of vocalic **r̥* or have been remade from (almost unattested) **θράσυνος* under the influence of *θάρσος*, *τό* 'courage' (itself secondary to Aeolic *θέρσος*: see p. 287). However, I shall suggest further on that *θάρσυνος* is a replacement for a form **θέρσυνος*, with *e*-grade root: see pp. 286–7.

haplology from *θαρσόσυνος.[39] But this explanation suffers from the defect that the words it takes as given, the adjectives in -συνο-, themselves require explanation as there is no inherited suffix **-suno-. Wyss (1954: 14–19) argues in detail that the Homeric πίσυνος 'trusting in, relying on' was created on the model of θάρσυνος, and that γηθόσυνος (also Homeric) was created on the model of θάρσυνος and (especially) πίσυνος. Later adjectives in -συνο- owed their creation to these models or to other -συνο- adjectives that were themselves ultimately dependent on one of these three archaic words (see e.g. Wyss 1954: 38, 42).

Wyss's own explanation for the creation of θάρσυνος, the word to which (in his view) all the other -συνο- adjectives ultimately owed their origin, is that the word is back-formed from θαρσύ̄νω 'encourage' (Wyss 1954: 15–17; so also Chantraine 1968–80: 424). Against this suggestion, Szemerényi (1964: 86 n. 1) points out that other back-formations from verbs in -ύ̄νω have long -ῡ̄- (so ἄρτῡ̄νος 'magistrate', back-formed from ἀρτύ̄νω 'arrange, prepare').[40] Frisk (1960–72: iii. 103) counters that the short -υ- of θάρσυνος may be analogical on the adjectives with suffix -συνο-, but this explanation only brings us back to the problem that the adjectives in -συνο- need to be explained. In view of these difficulties, the most convincing explanation of θάρσυνος is that it is a complex Caland formation. Most of the other -υνο- adjectives have a suffix -συνο- that is best explained as extracted ultimately from θάρσυνος.

Of our remaining two words with -υνο-, the *hapax* σχέδυνος 'tenacious', perhaps invented by Empedocles himself, seems to have been derived from the stem of σχεῖν (aorist infinitive) 'have, hold', perhaps under the influence of σχεδόν 'near' (see Frisk 1960–72: ii. 837). The other word, χαῦνος 'porous, spongy, loose', first attested in a fragment of Solon, was built on a root with final -u-, that of χάος < χάϝος, -εος-, τό 'chaos, space'. Even if we accept that the suffix -συνο- was originally due to resegmentation of θάρσυνος 'daring', it is at least possible that the existence of a mildly productive group of adjectives in -συνο- later influenced the creation of σχέδυνος and χαῦνος, with -υνο- secondarily extracted from -συνο-.

12.6 Explaining the recessive accent of adjectives in -ιμο-, -υμο-, -ινο-, and -υνο-

I have argued that the groups of consistently recessive adjectives in -ιμο-, -υμο-, -ινο-, and -υνο- have in common an original segmentation involving two Caland suffixes one after the other. The coincidence of

[39] Boisacq (1923: 334); admitted as a possibility by Risch (1974: 151).

[40] So also Nussbaum (1976: 76). On ἄρτῡ̄νος, cf. Chantraine (1933: 208); Schwyzer (1953: 491).

the rather puzzling recessive accentuation in all of these formations with the shared type of structure invites the hypothesis that complex Caland formations for some reason had recessive accentuation. The absolutely consistent recessive accentuation in all of these groups of words would cease to be surprising if we could say that words of this type inherited root accentuation. Root accentuation would, of course, have been transformed to recessive accentuation in Greek. But certain questions arise. Why should complex Caland formations have been root-accented? Is it specifically Caland suffixes that exhibit this behaviour, and if so, why? What role is played by the Caland system in determining accentuation? I have no final answer to these questions, but a number of observations may be made.

To begin with, it would be false to say that it is simply the presence of one Caland suffix after another that gives rise to recessive accentuation. Greek has a large number of finally accented words in *-ειvo-* (or occasionally Aeolic *-εννο-*) from **-εσ-νο-*,[41] e.g. *φαειvός* 'shining, radiant', *ἀργεννός* 'white', and one with Aeolic *-αννο-* from **-ασ-νο-*, *ἐραννός* 'lovely'. These words are clearly formed by adding a suffix *-νο-* after a suffix **-es-/-os-*, and in many cases the corresponding *s*-stem is actually attested (e.g. *φάος*, *τό* 'light', beside *φαεινός*). Although the suffix *-ειvο-* became independently productive in Greek and could even form derivatives to thematic stems (e.g. *κελαδεινός* 'noisy' to *κέλαδος*, *ὁ* 'din'; see pp. 197–8), it is clear that the suffix originated as a sequence of **-es-/-os-* and **-no-*. The form *ἐραννός* is also derived from what was probably an *s*-stem in origin, *ἔρως* 'love'.[42] In this instance the *s*- suffix appears in the zero grade in the derivative.

The suffixes **-s-/-es-/-os-* and **-no-* are both Caland suffixes, and yet the words in *-ειvο-*, *-εννο-*, and *-αννο-* are finally accented, without exception. But these derivatives have a quite different status from the other complex Caland types. The suffix **-s-/-es-/-os-* when it forms simplicia forms primarily nouns (see Risch 1974: 77–80) whereas the simple *u*-stems that participate in the Caland system are adjectives (cf. *ἡδύς* 'sweet, pleasant', *ὠκύς* 'swift'). On one view of the origin of Caland *-i-*, recently defended by Meißner (1998: 240–3), the *i*- stems too were originally adjectival in function. Words derived from *s*-stems using the suffix *-νο-* are therefore not complex Caland formations in the same sense as, say, adjectives in *-u-no-*.[43] In the case of *-u-no-* etc. within the Caland system, we are dealing with either the product of contamination

[41] Although some of these words have the suffix in an Aeolic form, the transmitted final accent is not Aeolic (cf. pp. 80–1).

[42] So Frisk (1960–72: i. 547); see the discussion in Meißner (1995: 165–6).

[43] Nussbaum (1976) implicitly recognizes this by reserving the term 'complex Caland suffix' for suffixes of type *-u-no-*.

between a stem in *-u-* and a stem in *-no-*, or a stem in *-u-* extended by *-no-* (Nussbaum 1976: 64–5; cf. also Meißner 1995: 67–9). No obvious semantic change takes place (cf. e.g. *θρασύς* 'bold' beside *θάρσυνος* 'daring'), and there is no change in grammatical category. In the case of words in *-no-* formed on *s*-stems (e.g. *φαεινός* 'shining' to *φάος*, *τό* 'light'), by contrast, an adjective is derived from a noun.

A characteristic shared by the complex Caland formations in *-ιμο-*, *-υμο-*, *-ινο-*, and *-υνο-*, but not by the formations in *-ενο-*, *-εννο-*, and *-αννο-*, is thus the fact that the addition of the second derivational suffix causes no change in grammatical category (assuming that Caland *-i-* is correctly interpreted as an adjectival suffix), and no clear semantic change. A process whereby one word is formed from another with no change in grammatical category or clear semantic change has been called an endocentric process of derivation (e.g. Peters 1980: 167).[44]

We could at this point simply conclude the discussion, but it may be worth wondering whether the apparent involvement of the Caland system in determining the accentuation of words with various complex suffixes is real or illusory. Is it an accident that *-ι-*, *-υ-*, *-νο-*, and *-μο-* are all Caland suffixes? Among non-Caland formations, a rather inadequate parallel for the consistent recessive accentuation of our adjectives in *-ιμο-*, *-υμο-*, *-ινο-*, and *-υνο-* might be found in a group of endocentric formations with the thematic vowel, i.e. words in which the thematic vowel serves to make a thematic form out of an athematic one but does not change the meaning of the base word.

The thematic vowel **-o-* is often used in Indo-European languages to make a thematic nominal form out of an athematic one. Thus, Greek *κόπρος* 'dung' is formed by adding the thematic vowel to the stem in *-r* continued by Sanskrit *śákṛt* n. 'dung'. The Sanskrit word, with genitive *śaknáḥ*, continues an old **r/n*-stem, **ḱek$^{\text{w}}$r̥/n-/ḱok$^{\text{w}}$r̥/n-*. The name for an aquatic animal found in Greek *ὕδρος* 'water-snake', Sanskrit *udrá-* m. *kind of aquatic animal* and Old High German *ottar* 'otter' is formed by adding the thematic vowel to the *r*-stem (with zero-grade *r*-suffix) of the word for 'water', again an old **r/n*-stem (Greek *ὕδωρ*, *ὕδατος* < **ud-ōr*, **ud-n-*).[45] However, not all thematic forms made out of old athematic ones are equal in status. In some instances, the meaning of the original word is not changed by the addition of the thematic vowel. Greek *κόπρος* is identical in meaning to Sanskrit *śákṛt*, but *ὕδρος* is fundamentally different in meaning from *ὕδωρ*. In the first

[44] What is meant by endocentric derivation and by its opposite, exocentric derivation, is well explained by Meid (1956: 266–8); Meid uses the term 'konzentrisch' (and elsewhere in the article 'nicht-exozentrisch') where I use 'endocentric'.

[45] Cf. Meißner's suggestion (1998: 241) that the basis for derivation was not simply the stem in *-r-* *qua* stem but an endingless locative in *-r*.

case, we may speak of a 'mechanical thematization' or endocentric derivative, in the second of a true or exocentric derivative.

Two kinds of exocentric derivation by means of the thematic vowel have been identified for Indo-European, each with its own semantic function. Both are particularly well represented in Sanskrit. The first process (with which we are not concerned here) involves lengthening of the root vowel (*vr̥ddhi*) as well as the addition of the thematic vowel. This type forms adjectives describing one thing as belonging to or coming from or made from another (Debrunner 1954: 104; Nussbaum 1986: 115–16).[46] The second kind of exocentric derivation involves the addition of the thematic vowel but no *vr̥ddhi* of the root vowel, and forms adjectives that mean 'provided with something' or 'having something' (Debrunner 1954: 136; Nussbaum 1986: 117). Words of this type virtually all have final accentuation in Vedic (Debrunner 1954: 138).[47] Most of the Vedic examples are derived from stems in Indo-European *-*men* or *-*es*:

pāmaná- 'having skin-disease' (cf. *pāmán-* m. *kind of skin disease*)
pīvasá- 'abounding with fat' (cf. *pī́vas-* n. 'fat')
taviṣá- 'strong' (cf. Old Avestan *təuuiš-* n. 'roughness')
etc.

A number of nouns formed in the same way and having a clearly different meaning from the base word are likely to be substantivized adjectives. The word for an aquatic animal, Sanskrit *udrá-*, belongs here:

udrá- m. *kind of aquatic animal* (= *ὕδρος* 'water-snake', OHG *ottar* 'otter'; cf. *ὕδωρ*, *τό* 'water')
vatsá- m. 'calf' ('eig. "Jährling"': Debrunner 1954: 136; cf. *ἔτος*, *τό* < **u̯etos* 'year')[48]
etc.

Endocentric formations are made by adding the thematic vowel to the stem of the base word without lengthening the root vowel. They are thus identical to the type of exocentric formation just described, except in their meaning (which is the same as that of the base word) and, as we shall see, their accentuation.

Debrunner (1954: 141–3) does not comment on the accentuation of mechanical thematizations, but many of his examples do not really

[46] Debrunner (1954: 104) mentions also a type of collective noun, e.g. Skt *pārśvá-* n. 'side' beside *párśu-* f. 'rib', but Nussbaum (1986: 116) explains words of this type as substantivized adjectives.

[47] Debrunner (1954: 138) takes *náva-* = Gk *νέος* 'new', standardly derived from the temporal adverb **nu*/ **nū* 'now', to be the only exception, but this word may belong rather to the group of derivatives with '*vrddhi*' (or perhaps not quite to either of the usual types of exocentric derivative with *-o-* ?); see Mayrhofer (1986–2001: ii. 25).

[48] Debrunner (1954: 136) takes the zero grade of the *s*-suffix here to be an archaism. Cf. Brugman (1879: 12–13).

belong here. Thus, *padá-* n. 'step, pace, stride' is not simply a thematic variant of the base word *pad-* m. 'foot' but a derived word with a different meaning. It is better classified as an exocentric derivative.

If we extract from Debrunner's (1954: 141–3) instances of straightforward thematization those examples in which the meaning of the thematic form is really identical or virtually identical to that of the athematic form, and for which an accent is attested, we find the following words.[49]

(*a*) With root accent:
ŕ̥bhva- 'skilful' : *ŕ̥bhú-* 'skilful'
róhita-/lóhita- 'red' : *rohít-* 'red brown'
hárita- 'yellow' : *harít-* 'yellow'
? *kévaṭa-* < **kaiu̯̥rta-* m. 'cave, hollow' : καίατα (n. pl.)· ὀρύγματα. ἢ τὰ ὑπὸ σεισμῶν καταρραγέντα χωρία ('trenches; or the places broken down by earthquakes'; Hesychius κ 208 Latte)[50]
kákuda- m./n. 'peak, summit' : *kakúd-* f. 'peak, summit'[51]
śā́da- m. 'grass' : *śād-* 'grass'
mánuṣa- m. 'man'[52] : *mánuṣ-* m. 'man'
rása- m. 'liquid' : Latin *rōs*, gen. *rōris* m. 'dew, moisture'

(*b*) With non-root accent:
phalgvà- 'weak, feeble'[53] : *phalgú-* 'weak, feeble'
dhvajá- m. 'banner' : *kr̥tá-dhvaj-* 'furnished with banners'
śākiná- 'strong' : *śākín-* 'strong'[54]
vandhúra- n. 'charioteer's seat' : *vandhúr-* m. 'charioteer's seat'

[49] The adjective *māṃścatvá-/mā́ṃścatva-* '(prob.) yellowish', apparently a thematization of *māṃścatú-* '(prob.) light yellow, dun-coloured', is attested with both initial and final accents (see Monier-Williams 1899: 805 s.v.). In addition, the meanings of both words are uncertain (cf. Debrunner and Wackernagel 1930: 250). Vedic *lopāśá-* m. 'jackal, fox' cannot be a straightforward phonological extension of the consonant stem found in Gk ἀλώπηξ 'fox', since the root vowel of the Skt form implies an original diphthong (cf. Frisk 1960–72: i. 83). Popular etymology as 'carrion-eater' (i.e. *lop-āśá-*) has been suggested (see Debrunner 1954: 142). If so, the accent may well be due to the synchronic analysis as a verbal governing compound (the type of Gk παιδ-αγωγός 'slave who accompanies a boy to school').

[50] The Hesychian form could continue the neuter plural of an old **r*/*n*-stem **kaiu̯̥r-*/**kaiu̯̥n-* (with the usual Gk *-τ-* introduced into the *n*-stem forms), while the Skt form could be a thematization starting from the *r*-stem (so Specht 1944: 25). But both the Gk and the Skt forms are *hapax legomena* and the reconstruction of an original **r*/*n*-stem is highly speculative (so Mayrhofer 1953–80: i. 267; cf. Mayrhofer 1986–2001: i. 400).

[51] Contrast the pair *kakubhá-* 'lofty, excelling' : *kakúbh-* f. 'peak, summit', in which *kakubhá-* is a finally accented exocentric derivative; cf. Mayrhofer (1986–2001: i. 287).

[52] Final accentuation is attested in the *Maitrāyaṇī Saṃhitā*.

[53] A *hapax legomenon* and probably a one-off creation; see Mayrhofer (1986–2001: ii. 203 s.v. *phalgú-*[2]).

[54] Once attested as *śā́kin-*; see Macdonell (1924: 311 s.v.).

divá- n. 'heaven, sky' : *dív-* (nom. sg. *dyaúḥ*) m. 'heaven, sky'
viṣá- n. 'poison' : Young Avestan *vīš-* n. 'poison'[55]
haṃsá- m. 'goose' : Gk *χήν* 'wild goose'
mahá- 'great, strong, abundant' : *máh-* 'great, strong, abundant'

Unlike the exocentric derivatives in **-o-* (Skt *-a-*), these endocentric formations do not show a consistent accent. Half of the words have a root accent (irrespective of the accent of the base word) while the others have an accent elsewhere in the word. With the exception of *śākiná-* 'strong' beside *śākín-* 'strong', the words with non-root accent have a final accent if the base word has a monosyllabic stem (and mobile accentuation at least in principle; so *dhvajá-*,[56] *divá-*, *viṣá-*,[57] *haṃsá-*, *mahá-*); otherwise they continue the accent of the base word (so *phalgvà-*<**phalgúa-*, *vandhúra-*).

The group of endocentric thematizations with root accent would provide a parallel for the endocentric formations with Caland suffixes that display recessive accentuation in Greek. This evidence cannot be pressed too far because root accentuation is not the only accent pattern found for the endocentric thematizations, and it is difficult to know what is old and what is new here. The possibility at least suggests itself, however, that at some stage in Indo-European endocentric formations received root accentuation. This principle of accentuation was not active within Greek, but certain complex Caland suffixes were inherited as independent suffixes and these were treated as inherently unaccented suffixes.

It is thus possible that the strikingly consistent recessive accentuation we find in Greek adjectives with various complex suffixes is originally a property of endocentric formations, whether formed with combinations of Caland suffixes or not. The apparent involvement of the Caland system would be due simply to the fact that the Caland suffixes were particularly prone to appear as semantically vacuous (i.e. endocentric) extensions of one another. One could go further and speculate that the particularly consistent accentuation of the complex Caland formations in *-vo-* and *-μo-* may be related to the privileged status of Indo-European

[55] A thematic synonym *vīša-* n. 'poison' is also attested in Young Avestan. This form and Gk *ἰός* 'poison', Latin *ūrus* n. 'poison' (the latter with peculiar inflection) are formally identical to Skt *viṣá-* n. apart from the long *-ī-*; for a suggestion regarding the alternation *-i-*/*-ī-*, see Mayrhofer (1986–2001: ii. 563–4 s.v. *viṣá-*). Skt *viṣ-* f. 'faeces' is unrelated; see Mayrhofer (1953–80: iii. 231 s.v. *viṣṭhā*), with bibliography.

[56] The root noun *-dhvaj-* 'banner' is attested only in the compound *kṛtá-dhvaj-* 'furnished with banners', but would be expected to have mobile accentuation if it were found independently.

[57] The root noun is not attested in Skt, but again would be expected to have mobile accentuation.

*-*no*- and *-*mo*- as suffixes that appeared particularly in complex, as opposed to simple, Caland formations. Nussbaum (1976: 74) says,

> A striking distributional characteristic of the marginal Caland suffixes -mo- and -no- is that in a very large proportion of the cases in which they figure in a Caland system at all, -mo- and especially -no- are present only in one of these complex suffixes of the form -i-no-, -u-no- (less frequent), -i-mo-, -u-mo- (less frequent). From time to time they even show signs of a minimal productivity in these shapes.

To return from our speculations to firmer territory, we may at least conclude that for some reason a number of complex Caland suffixes share the peculiarity of absolutely consistent recessive accentuation in Greek. We now turn to some more disparate scraps of data—in part already mentioned earlier—that may provide further evidence for this conclusion, and some that may support the possibility of root accentuation in such formations already in Indo-European.

12.7 Further Greek evidence for recessive accentuation in complex Caland formations

We have noted that the suffixes *-*mo*- and *-*no*- are particularly well documented as second members of complex Caland suffixes in Indo-European, and that it is perhaps no accident that precisely those complex Caland suffixes containing *-*mo*- or *-*no*- as their second members form coherent groups of recessively accented adjectives in Greek. But other endocentric Caland formations were possible, and we may identify some further possible survivals of Greek recessive accentuation in complex Caland formations.

The noun *ἄργυρος* 'silver' has been regarded as a substantivized adjective originally meaning 'white' and coming to mean 'white metal, i.e. silver' (e.g. Risch 1974: 70). The word is formed on a good Caland root (see p. 272), and Nussbaum (1976: 65) identifies *ἄργυρος* as a complex Caland formation. The recessive accentuation of this word cannot be used as evidence for recessive accentuation specific to complex Caland formations, since the recessive accent could have resulted from the word's substantivization. Risch (1968: 212–13) indeed assumes that the word had final accentuation when it was an adjective. He also argues that *ζέφυρος* 'westerly wind' is originally an adjective formed on the root of *ζόφος*, *ὁ* 'darkness' as a counterpart to **ἀργυρός* 'bright'.[58] He reconstructs the hypothetical adjective **ζεφυρός* 'dark' with final accentuation like its model, **ἀργυρός* 'bright'. It is at least possible, however, that as a complex Caland formation *ἄργυρος* was

[58] For further details see p. 337 s.v. *ζέφυρος*, and Risch (1968).

accented on the root even when it was an adjective, and that neither this word nor its counterpart *ζέφυρος* ever passed through a finally accented stage.

The possibility that Greek inherited some complex Caland formations in *-υρο-* with root accentuation may shed some light on the three adjectives in *-υρο-* with anomalous recessive accentuation:

γαῦρος 'exulting in, boastful'
παῦρος 'small'
ἀήσυρος 'light as air'

γαῦρος and *παῦρος* are both formed on roots in *-υ-*.[59] The addition of *-ρο-* to a root ending in *-υ-* may be due to the complex Caland type of *ἄργυρος*, and if so the recessive accent of *γαῦρος* and *παῦρος* would be a further manifestation of the recessive accent of complex Caland formations and forms modelled on them. The segmentation of *ἀήσυρος* 'light as air', built ultimately on the root of *ἄημι* 'blow', is unclear, but again if there were some old recessive complex Caland formations in *-υρος*, the combination of recessive accentuation with a termination *-υρος* may be connected. Two further recessive adjectives in *-υρος*, *κραῦρος* 'brittle' and *φλαῦρος* 'paltry', are of uncertain structure but might well belong here.[60]

The usual accentuation for Greek adjectives in *-υρο-* is on the final syllable:

φλεγυρός 'burning, inflamed'
λιγυρός 'clear, shrill'
ψαθυρός 'friable, crumbling'
βδελυρός 'disgusting' (on Attic *βδέλυρος*, see pp. 260 with n. 6, 263)
ἁλμυρός 'salt, briny'
καπυρός 'dried by the air'
λεπυρός 'in a husk, peel, rind'
γλαφυρός 'hollow, hollowed; polished; subtle, exact'
ἐχυρός 'strong, secure'
ὀχυρός 'firm, lasting'

Leumann (1953: 223 n. 2) has suggested that several of these words originally contained the suffix *-λο-*, dissimilated to *-ρο-* following

[59] For the root *gau-* (perhaps from **geH₂u-*) of *γαῦ-ρος*, cf. the nasal infix present *γά-ν-υ-μαι* 'brighten up, be glad' (if connected) and *γαίω* < **γάϝ-ι̯ω* 'rejoice' (see Frisk 1960–72: i. 289; Vine 2002: 339). For the root *pau-* (< **peH₂u-*) of *παῦ-ρος*, cf. Attic *παυς* 'child' (attested on vases); *παῖς* 'child' < **pau̯-i-d-s*, Lat. *pau-cus* 'little' (pl. 'few'), Goth. *faw-ai* 'few' (see Chantraine 1968–80: 865; Risch 1974: 70; Frisk 1960–72: ii. 463; Lubotsky 1988: 135).

[60] For the observation that *γαῦρος*, *κραῦρος*, *φλαῦρος*, and *παῦρος* in some sense form a set, cf. Lubotsky (1988: 135) and compare Arc. 79. 17–20.

an -λ- earlier in the word:[61] φλεγυρός from *φλεγυλός; λιγυρός from *λιγυλός; βδελυρός from *βδελυλός; γλαφυρός from *γλαφυλός. In principle, the possibility of an original -υ-λο- arises for all words with -ρο- built on a stem containing -λ-. In view of the disproportionate number of stems containing -λ- among the finally accented adjectives in -υρο- (listed above), I am inclined to think that at least some of these words do indeed have a -ρο- that is dissimilated from -λο-. It is not very clear whether adjectives with *-*u*-*lo*- should be considered complex Caland formations, since it is also not very clear whether *-*lo*- is properly a Caland suffix; in addition, I have left open the possibility that the accentual phenomenon studied here is not restricted to Caland suffixes (pp. 279–83). It is at least possible, however, that the Greek complex suffix -υλο- is of less high antiquity than the complex Caland suffixes proper and that, even for this reason alone, adjectives with -υλο- do not share the recessive accentuation found in complex Caland forms proper.

However, not all our finally accented adjectives in -υρο- are built on a stem containing -λ-, and so the involvement of original *-*ulo*- is not sufficient by itself to explain the final accentuation of all the adjectives just listed. Rather, some of these adjectives—including all those with stems not containing -λ- —are likely to be accented on the model of other finally accented Greek adjectives in -ρο-. If there was a group of adjectives in -υρο- from *-υλο- that had been finally accented from the beginning, these may have been particularly influential on the accentuation of other Greek adjectives in -υρο-. The forms γαῦρος, παῦρος, and ἀήσυρος (none of which, incidentally, has a stem containing -λ-) would represent survivals of a pattern that did not remain productive in Greek. Indeed, it may be of interest that γαῦρος has a synonymous doublet ἀγαυρός/ἄγαυρος, for which the ancient grammatical sources disagree on the accent (see p. 330 s.v.), as if there was some tension between recessive accentuation and the analogy of other adjectives in -(υ)-ρο-.

There is one final example of a Greek thematic complex Caland formation with recessive accentuation. The adjective ἄργυφος 'silver-shining, silver-white' is built on the famous Caland root *H_2*erĝ*-. Nussbaum (1976: 87) identifies a marginal Caland suffix *-b^h*o*-, and ἄργυφος would be a complex Caland formation comparable to ἄργυρος 'silver' or Sanskrit *árjuna*- 'white, bright, silvery', both of which share with ἄργυφος both a *u*-stem and root accentuation. The root accentuation of Sanskrit *árjuna*- brings us to the question of comparative evidence for the accentuation of complex Caland formations.

[61] For λιγυρός from *λιγυλός see already Schwyzer (1953: 258). For further examples of dissimilation of Greek **l* . . . *l* to *l* . . . *r*, see pp. 36–7 with n. 58.

12.8 Comparative evidence for the accentuation of complex Caland formations and evidence from ablaut

There is a certain amount of comparative evidence for root accentuation in complex Caland types. For the complex suffix *-*uno*- we have Sanskrit *árjuna*- 'white, bright, silvery' (root *$H_2\underset{\circ}{r}\hat{g}$-) and *táruṇa*- 'young, tender'.[62]

The accentuation of ἑκυρός 'father-in-law' and its cognates has been mentioned already (pp. 164, 229–30). The word is not built on a recognizably 'Caland' root; in fact it is usually thought not to be built on a 'proper' root at all but on the base of the reflexive pronoun *$s\underset{\cdot}{u}e$. However, the root accentuation found in Sanskrit *śváśura*- m. 'father-in-law' and implied by Old High German *swehur* and Old English *swéor* 'father-in-law' is unusual for an Indo-European derivative with *-*ro*- (see p. 159). Whatever the origins of the base *$s\underset{\cdot}{u}e(-)\hat{k}$-, if the formation with -*u-ro*- is ultimately related to the 'complex Caland' phenomena we have been discussing, the root accentuation of the Sanskrit and proto-Germanic forms could be the original one on the principle being suggested here. Greek would have replaced the root accent by final accentuation in accordance with the regular early Greek accentuation of words with -*ρο*-.[63]

Apart from the evidence from accentuation, it is noteworthy how several apparently old forms reflect a full-grade root, which would be expected if root accentuation were original. Sanskrit *árjuna*- 'white, bright, silvery' and *táruṇa*- 'young, tender', mentioned above, display this characteristic, which is also a possibility (though not provable) for Greek ἄργυρος, ἄργυφος, and ἀργιό-εις. The vocalism of Sanskrit *árjuna*- is particularly significant in the light of the contrast with Sanskrit *$\underset{\circ}{r}$jrá*- 'swift' (= Greek ἀργός 'white, swift'), from *$H_2\underset{\circ}{r}\hat{g}r\acute{o}s$. Greek ἥδυμος 'sweet, pleasant' (from *$s\underset{\cdot}{u}eH_2d$-*u*-*mo*-*s*), also built on a good Caland root, again has a clear full-grade root, but this word is less significant for our purposes because the same vocalism is found in closely related forms (such as ἡδύς 'sweet, pleasant'). On the other hand, the clear

[62] Skt *táruṇa*- = Young Avestan *tauruna*- 'young'; cf. Hesychius' τέρυ· ἀσθενές, λεπτόν ('weak, light'; Hesychius τ 559 Schmidt), Arm. *t'arm* < *$t\underset{\circ}{r}$-mo*- 'young, fresh': Nussbaum (1976: 76). Cf. Mayrhofer (1953–80: i. 483; 1986–2001: i. 632, suggesting an IE reconstruction **téru-no*-).

[63] Debrunner (1954: 351) assumes that Skt *drávina*- n. 'movable property' is related to *dā́ru*- n. 'wood', in which case it would be a near formal parallel to Gk δρύϊνος 'oaken', which he also mentions. However, Hoffmann (1957: 69–70) argues that *drávina*- n. (and the *s*-stem form *drávinas*- n.) is built on a laryngeal-final root **druH*- 'cut down' also lying behind the Rig-Vedic participle *drūṇāná*- (for the root see Rix 2001: 129 s.v. ?**dreu̯H*-). Mayrhofer (1986–2001: i. 756) inclines to accept this connection between *drávina*- n. and *drūṇāná*-. In this case the -*i*- of Skt *drávina*- n. would reflect an IE laryngeal, not original **i*, and the word for 'wood' would be unrelated.

zero-grade root found in θάρσυνος 'daring' (from *d^{h}ṛs-u-nos) need not be old as the zero-grade vocalism of θάρσος 'courage' is secondary compared to the *e*-grade of Aeolic θέρσος (see Frisk 1960–72: i. 655), and demonstrates that zero-grade vocalism has spread within this group of related forms. Indeed, one might even take the -αρ- rather than -ρα- of θάρσυνος as evidence for an originally *e*-grade root, given the opposition between θρασύς (with original zero grade) and θάρσος (replacing θέρσος).

The most serious counter-example outside Greek to the pattern of root accentuation in complex Caland formations is Sanskrit *rudhirá-* 'red', a complex Caland formation built on a good Caland root (see Nussbaum 1976: 64) and showing the zero-grade root found in the Greek simple *-ro-* adjective ἐρυθρός 'red'. However, it is easier to explain both the final accentuation and the zero-grade root of *rudhirá-* as analogical on other adjectives in *-ra-* than it would be to explain the accentuation or the root vocalism of *árjuna-* 'white, bright, silvery' or *táruṇa-* 'young, tender' on the basis of analogical developments within Indo-Iranian. (*táruṇa-* 'young, tender' is sometimes used as a noun in various meanings, and loss of final accentuation may follow substantivization in Vedic as in Greek, but this change of accentuation does not normally affect a word in its use as an adjective.) Elizabeth Tucker points out to me that some support for the possibility of remodelling in a complex Caland formation such as *rudhirá-* 'red', or for more than one chronological layer in the creation of such forms, comes from Vedic *gabhīrá-* and its variant form *gambhīrá-* 'deep', an adjective built with suffixes *-i-* and *-ra-* on a Caland root (cf. e.g. compositional *gabhi-* and see Mayrhofer 1953–80: i. 323) but with secondary lengthening of the *-i-* and in the form *gambhīrá-* with a full-grade root contradicting the final accentuation.

The most compelling pieces of comparative evidence thus lend some support to the hypothesis that complex Caland formations were root-accented in Indo-European.

12.9 Conclusion

We have seen that the suffixes *-μο-* and *-νο-*, although apparently inherently accented suffixes, form adjectives in *-ιμο-*, *-υμο-*, *-ινο-* (adjectives of material), and *-ννο-* with absolutely consistent recessive accentuation. The elements *-ιμο-*, *-υμο-*, *-ινο-*, and *-ννο-* that appear in these adjectives are likely to be complex Caland suffixes in origin, and we have seen some further evidence for an old pattern of root accentuation—becoming Greek recessive accentuation—in complex Caland formations.

Complex Caland formations represent an old type of endocentric derivation, and the reason for the recessive accentuation found in Greek adjectives in *-ιμο-*, *-υμο-*, etc. is perhaps to be sought in a principle of Indo-European word-formation assigning root accentuation to endocentric derivatives or at least to some types of endocentric derivative. If so, an account of Indo-European accentuation ought to include such a principle, or to show how an effect of this kind followed from wider principles of accentuation or word-formation. I do not have the details of such an account, but hope that the identification of a problem in Indo-European accentology may be the first step towards the finding of a solution.[64]

An account of Greek accentuation, on the other hand, does not need to include a principle assigning recessive accentuation to endocentric derivatives. From a synchronic Greek point of view, *-ιμο-*, *-υμο-*, *-ινο-*, and *-υνο-* are independent and inherently unaccented suffixes. The few survivals of recessive accentuation in adjectives with *-υρο-* are not due to a synchronic inherently unaccented suffix *-υρο-*, since words such as *ἁλμυρός* 'salt, briny' and *λιγυρός* 'shrill' show that synchronic *-υρο-* (perhaps synchronically segmentable as *-υ-ρο-*, at least in some instances) was inherently accented. The nouns *ἄργυρος* and *ζέφυρος* were possibly protected by their substantivization from acquiring final accentuation when *-υρο-* ceased to be an inherently unaccented synchronic suffix. *γαῦρος*, *παῦρος*, and *ἀήσυρος* were protected by the synchronic lack of clarity of their segmentation.

[64] It is, perhaps, worth noting in passing that if, as suggested, the root accentuation of endocentric formations can be reconstructed for IE then a first consequence is that endocentric formations themselves need to be assumed for IE; their existence in various IE languages cannot be due *wholly* to developments within the histories of those individual languages.

13 SUMMARY AND FURTHER CONSEQUENCES

13.1 Summary of results

We have seen that the position of the Greek accent is neither determined purely phonologically nor simply an idiosyncratic property of the individual word. The morphological structure of a word plays some role in determining its accentuation; in particular, the position of the accent is often determined by the derivational suffix nearest to the end of the word (pp. 145–6). Thus, words with *-ικο-* as last derivational suffix are finally accented, regardless of the identity of the root or of any other suffixes,[1] but words with *-ιμο-* as last derivational suffix are consistently recessive. But things are more complicated. Often, words that appear to have the same last derivational suffix are not all accented in the same way. Sometimes the suffix appears to be crucial in determining a word's accentuation, but at other times it is apparently irrelevant or at least not the only relevant factor. One *could* simply say that some morphological classes of Greek word have their accentuation crucially determined by the last derivational suffix whereas others do not. I have thought it worthwhile, however, to see whether any more general principles might explain how the apparent inconsistency in the role of the last derivational suffix came about historically and how it might have been perceived in synchronic terms.

Our investigations of words with various suffixes have yielded further examples of categories whose accentuation is absolutely or almost absolutely consistent, and also further examples of categories whose members are divided between different accent classes, as follows.

Consistently or almost consistently accented:

• adjectives with *-ρο-*	finally accented
• adjectives with *-το-*	finally accented
• nouns with *-το-* added directly to an *ο*-grade or CVRV type root	recessive
• adjectives with *-νο-* (not *-(σ)υνο-* or adjectives of material with *-ινο-*)	finally accented
• neuter nouns with *-ανο-*	recessive
• (polysyllabic) adjectives with *-ιλο-* or *-υλο-* (mostly *-υλο-*)	intermediately accented

[1] On *ἡλίκος* 'as great as', *τηλίκος* 'so great', *πηλίκος* 'how great', and *ὁπηλίκος* 'how great', see pp. 94–5.

• adjectives with -*ιμο*-	recessive
• adjectives with -*υμο*-	recessive
• adjectives of material with -*ινο*-	recessive
• adjectives with -(*σ*)*υνο*-	recessive
Divided in accentuation:	
• nouns with -*ρο*-	finally accented/recessive
• nouns with -*το*- (not *o*-grade or CVRV types)	finally accented/recessive
• nouns with -*νο*-	finally accented/recessive
• adjectives and nouns with -*λο*- (not -*ιλο*-/-*υλο*-)	finally accented/recessive
• (polysyllabic) nouns with -*ιλο*- or -*υλο*-	intermediately accented/ recessive
• nouns with -*μο*-	finally accented/recessive

For those categories displaying consistent or almost consistent accentuation, the natural historical conclusion is that the accentuation pattern was inherited or, in the case of consistent recessive accentuation, the regular outcome of inherited initial or root accentuation or, for adjectives with -*ιλο*- or -*υλο*-, the result of morphologization of the outcome of Wheeler's law. The suffix -*ανο*- forming neuter nouns was probably not itself inherited (see pp. 198–9), but the consistent recessive accentuation of neuter nouns with -*ανο*- suggests that recessive accentuation was associated with the category from its beginnings. Taken by themselves, the categories in the first section of the list above suggest that there existed the following suffixes with the inherited or acquired accentual properties noted in parentheses:

- -*ρο*- (inherently accented)
- -*το*- (inherently accented)
- -*το*- (inherently unaccented)
- -*νο*- (inherently accented)
- -*ανο*- (inherently unaccented)
- -*ιλο*- (inherently accented on the first syllable)
- -*υλο*- (inherently accented on the first syllable)
- -*ιμο*- (inherently unaccented)
- -*υμο*- (inherently unaccented)
- adjective-of-material suffix -*ινο*- (inherently unaccented)
- -(*σ*)*υνο*- (inherently unaccented)

Still taking into account only the categories with consistent accentuation, we may say that to recognize both inherently accented -*το*- and inherently unaccented -*το*- is not merely to stipulate that words with -*το*- are sometimes finally accented and sometimes recessive, since further characteristics distinguish words with inherently accented -*το*-

from those with inherently unaccented -τo-. Inherently accented -τo- forms adjectives, which are never built simply on an *o*-grade or CVRV type root, while inherently unaccented -τo- forms nouns on roots of precisely these shapes. However, we also need to consider the categories whose accentuation is not consistent. Many of these involve suffixes whose shape is identical to suffixes attached to categories with consistent accentuation.

For the categories that are divided in their accentuation, recessive accentuation is always one of the possibilities. I have argued that the accentual split in these categories is due to a change from non-recessive to recessive accentuation in some members of the group. If the accentual split in certain categories is correctly attributed to historical change, it follows from the fact that some categories have consistent accentuation whereas others do not that accentuation is more stable in some groups of nouns and adjectives than in others. It appears, furthermore, that accentual stability characterizes groups of words whose last derivational suffix has a clear formal and functional identity.

The suffix -ρo-, it has been suggested (pp. 231–3), is a fundamentally adjectival suffix. When this suffix appears on an adjective, it is therefore identifiable as an example of the adjectival suffix -ρo- both on formal grounds (it consists of the phonological sequence /*ro*/) and on functional grounds (the word it belongs to is an adjective). When what was historically the same suffix appears on a noun, however, it is identifiable as an example of the suffix -ρo- only in so far as it consists of the phonological sequence /*ro*/. The tendency to identify -ρo- as a suffix when it appears on a noun is therefore weaker and there is the potential for the noun with -ρo- to be 'demorphologized'—to come to be treated as having an unanalysed stem. The same can be said for the nouns with -τo- that are not formed on an *o*-grade or CVRV type root. These, I suggest, were formed—historically speaking—with the same inherently accented suffix as adjectives with -τo-. Nouns with -νo-, apart from the neuters with -ανo-, were again formed with the inherently accented and fundamentally adjectival suffix -νo-. The neuter nouns with -ανo- were productive *qua* nouns; other nouns with -νo- were not.

When a word has undergone 'demorphologization', its accentuation can no longer be determined by the presence of an inherently accented suffix as the suffix is no longer treated synchronically as present. The word may retain its non-recessive accentuation, but the necessary accentual property now becomes a characteristic of the whole—synchronically unanalysed—stem. On the other hand, the word may lose its inherent accent altogether, in which case a recessive accent will be assigned by default. To put the same point in another, more theoretically neutral, way, a word whose synchronically unanalysed stem is characterized by a non-recessive accent is synchronically irregular,

since words with unanalysed stems are most often recessive; the accentuation of such a word may become regularized—the word may become recessive.

We have noted additional correlations between accentuation and token frequency. For nouns with *-ρο-*, *-το-*, and *-νο-* we found that, other things being equal, very high frequency and very low frequency words were most likely to retain their non-recessive accentuation. I suggested that very low frequency words are less likely to undergo 'demorphologization' than words whose token frequency is moderate or high. Very high frequency words, while prone to demorphologization, are less prone than words of moderate frequency to lose their non-recessive accentuation.

These suggestions may be drawn together by means of the following hypothesis. Lexical or inherent accents, which are necessary for non-recessive accentuation, have a tendency to be lost over time when they attach to infrequently occurring morphemes, whether those morphemes are lexical stems or suffixes. Suffixes are generally more likely to occur frequently than lexical stems, and consequently the accentual properties of suffixes are relatively stable in Greek. When a word has undergone 'demorphologization', however, its non-recessive accent becomes a feature of a lexical stem. This stem is likely to be a less frequent item than the suffix was, and the accentual feature is consequently more likely to be lost. Highly frequent words, however, have lexical stems which, being comparatively frequent, have a correspondingly greater chance of retaining their lexical accents. The tendency to retain non-recessive accentuation in very *infrequent* lexical items is, on the other hand, due to the failure of such items to undergo 'demorphologization', not to a tendency for infrequent unanalysed stems to retain lexical accents. When 'demorphologization' has not occurred, non-recessive accentuation remains a property of the derivational suffix, not of the stem as a whole, and the derivational suffix is likely to be a frequent item even if a given word to which it attaches is highly infrequent.

For some words formed historically with the suffix *-λο-* (e.g. *ὀμφαλός* 'navel', *τροχίλος* 'Egyptian plover', *ποικίλος* 'many-coloured'), Wheeler's law has given rise to some additional complications. Wheeler's law was morphologized so that the complex suffixes *-ιλο-* and *-υλο-* came to be inherently accented on their penultimate syllables. Simple *-λο-*, and other complex suffixes including *-λο-*, however, retained their original inherent accent on the syllable *-λο-*. The complex suffixes *-ιλο-* and *-υλο-* appear to have been semantically characterized as forming adjectives on the one hand and nouns denoting animate beings on the other. These suffixes remained formally and functionally identifiable when they appeared on adjectives and names for animate beings, and intermediate accentuation is consequently normal for these categories.

On the other hand, the suffixes were not semantically identified in nouns that did not denote animate beings (even though they might denote *parts* of animate beings, as in *σφόνδυλος* 'vertebra'); here 'demorphologization' and a change to recessive accentuation occurred.

Both nouns and adjectives with simple *-λο-*, and with complex *-λο-* suffixes other than *-ιλο-* and *-υλο-*, are split between final and recessive accentuation. In this respect the suffix *-λο-* differs from the suffixes *-ρο-*, *-το-*, and *-νο-*. It is also noteworthy that very low frequency nouns with *-λο-* have no special tendency to final accentuation; they are in fact consistently recessive. I suggested that the suffix *-λο-*, which was not productive during the historical period, was beginning to lose its synchronic identifiability by the time the ancient Greek accent was codified. Words with *-λο-* were tending to become 'demorphologized' even if they were adjectives, although the tendency was greater for the nouns. The consistent recessive accentuation of very low frequency nouns formed with *-λο-* can be related to the same general tendency for a word not to be analysed synchronically as having the suffix *-λο-*. Possibly the suffix had ceased to be synchronically viable enough to be a natural choice in the analysis of an unfamiliar word, in contrast to *-ρο-*, *-το-*, and *-νο-* whose synchronic viability remained high enough for speakers to make use of them in the analysis of unfamiliar items.

The majority of nouns with the suffix *-μο-* are accented on the final syllable (so *ἀγμός* 'fracture'), as are the few Greek primary adjectives in *-μο-* (e.g. *θερμός* 'warm'). It is likely that *-μο-* was inherited as an accented suffix, and that it remained inherently accented in synchronic terms. Those *-μο-* nouns with recessive accentuation had become atypical, in one or more formal or semantic ways, of the group of *-μο-* nouns as a whole. Some had acquired concrete meaning (so *θέρμος* 'lupine'), in contrast to the abstract meaning that was productive for nouns with *-μο-*. In some words, the suffix *-μο-* was attached to a stem ending in a short vowel (as in *πλόκαμος* 'lock or braid of hair'). This configuration was apparently not productive, and seems even to have been positively avoided, in the historical period (Ch. 11 n. 5). In some words again, the connection between derivative and base word had been lost either because the two had diverged phonologically (cf. *ὅρμος* 'cord, chain' versus *εἴρω* 'tie') or through the loss of the base word from the language (as in *κόσμος* 'order; ornament; ruler'). A word was less likely to be segmented as having a suffix *-μο-* if the base to which *-μο-* was attached was not synchronically perspicuous. In such cases, I have suggested that again 'demorphologization' has occurred. Words that had undergone these formal and semantic changes ceased to be analysed synchronically as containing the suffix *-μο-*, and this loss of analysis made a loss of lexical accent (in other terms, regularization to recessive accentuation) possible.

Some of the categories listed above as having 'consistent or almost consistent accentuation' have almost consistent rather than absolutely consistent accentuation. In particular, a few adjectives with *-ρο-* and a few adjectives with *-νο-* are recessive rather than finally accented. In addition, the consistent recessive accentuation of adjectives with *-ιμο-*, *-υμο-*, *-(σ)υνο-*, and the adjective-of-material suffix *-ινο-* (e.g. *φαίδιμος* 'shining, radiant', *ἔτυμος* 'true', *θάρσυνος* 'daring', *λᾶΐνος* 'of stone') is surprising in historical terms if the *-μο-* and *-νο-* of these complex suffixes are historically the same suffixes as simple *-μο-* and *-νο-*. I suggested that the consistent recessive accentuation of adjectives with *-ιμο-*, *-υμο-*, and *-(σ)υνο-* and the adjectives of material with *-ινο-* is due to a principle of Indo-European accentuation that assigned root accentuation to words in which a stem ending in a Caland suffix was extended, in a functionally vacuous way, by the addition of another Caland suffix. Inherited root accentuation in complex Caland formations may also be ultimately responsible for some of the anomalous recessive adjectives with *-ρο-* (e.g. *παῦρος* 'small').

Root accentuation may have been a characteristic of endocentric formations in general, rather than of endocentric complex Caland formations in particular (see pp. 279–83). I have not speculated as to why Indo-European should have assigned root accentuation to endocentric formations. From a Greek point of view, however, we may say that *-ιμο-*, *-υμο-*, *-ινο-*, and *-υνο-* (the latter giving rise in Greek also to *-συνο-*) were inherited as inherently unaccented suffixes and were treated in Greek as distinct suffixes from simple *-μο-* and *-νο-*.

13.2 Further applications

The conclusions drawn here are based on a study of words having one of a small number of suffixes, all of them thematic suffixes, but a superficial look at other groups of words suggests that the principles of explanation proposed are more widely applicable. The following sections discuss briefly two areas to which they might apply and which could profitably form the subjects of further study.

13.2.1 Deverbative nouns in *-ā-/-η-*

A suffix *-ā-* (which in Attic-Ionic became *-η-* except after *-ε-*, *-ι-*, or *-ρ-*) was inherited for forming *nomina actionis* to verbal stems (see Chantraine 1933: 18–25; Risch 1974: 8, 10–12). Thus, *κλοπή* 'theft' provides a *nomen actionis* to *κλέπτω* 'steal'. The type was inherited with mostly *o*-grade of the verbal root, but new creations that arose in Greek within the historical period often retained the vocalism of the verbal stem on which they were based, especially if the stem of the base verb

provided no *-e-* that could simply be replaced with *-o-* (so *θλίβη*[2] 'rubbing' (Galen 18(2). 923. 7), formed to *θλίβω* 'squeeze, chafe'). Where the base verb provided an *-e-* that could simply be replaced by *-o-*, however, *o*-grade vocalism seems to have remained productive into the classical period and beyond, at least to judge by the numerous examples first appearing in the fifth century BC or later (cf. *στοργή* 'love, affection', first attested at Empedocles fr. B 109.3 D–K).

Some derivatives with *-ᾱ-/-η-* acquired concrete meanings either alongside or instead of the original abstract meanings. Thus *ὀροφή*, originally a *nomen actionis* to *ἐρέφω* 'cover with a roof', means 'roof' or 'ceiling' (concrete meanings only), while *ταφή*, originally *nomen actionis* to *θάπτω* 'bury', can mean either 'burial' (abstract meaning) or 'burial place' (concrete meaning).

Two main points have been made about the distribution of accentual types among derivatives in *-ᾱ-/-η-*.

(*a*) Derivatives in *-ᾱ-/-η-* with abstract meanings are normally finally accented (thus *κλοπή* 'theft') while those with concrete meanings are often recessive (thus *στέγη* 'roof').[3]
(*b*) Those *-ᾱ-/-η-* stem *nomina actionis* with *o*-grade root vocalism typically have final accentuation (thus *κλοπή* 'theft') while those with other root vocalisms are sometimes finally accented, sometimes recessive (thus *ἁφή* 'lighting, kindling; touch' but *λήθη* 'forgetting, forgetfulness'); so Bally (1945: 50–1).

Before Kuryłowicz (1958: 115–16), proponents of point (*a*) advanced no very clear reasons why *-ᾱ-/-η-* derivatives with abstract meaning should be accented differently from those with concrete meaning. At least where there are minimal pairs (e.g. *ἁρπαγή* 'seizure' and *ἁρπάγη* 'hook, grappling iron'), Vendryes (1904: 149–50) regarded these as coming under a general principle whereby words designating an action are differentiated by means of their accentuation from corresponding words designating the author, instrument, or concrete object of the action. However, minimal pairs of this type constitute the exception, not the rule. A large number of *-ᾱ-/-η-* derivatives have both abstract and concrete meanings (cf. again *ταφή* 'burial' (abstract) or 'burial place' (concrete)), and in the vast majority of instances the word has the same accent in both meanings. This general paucity of minimal pairs suggests that differentiating abstract from concrete nouns was not the primary motivation for the distribution of accents among these words. Vendryes also does not give any insight into the mechanism by which such differentiation might occur.

[2] So Kühn's text; *θλιβή* LSJ s.v.

[3] Vendryes (1904: 149–51, 155–6); Bolelli (1950: 92–3); Kuryłowicz (1958: 115–16; 1968: 91).

Kuryłowicz (1958: 114–15; 1968: 91), while also regarding the motivation as one of differentiating abstract from concrete nouns, suggests an essentially analogical mechanism by which this differentiation might be achieved. The starting-point for the process is the genitive plural in *-ᾱ́ων* (later contracted to *-ῶν*). The accent of the genitive plural would have fallen in exactly the same place whether the form belonged to a finally accented paradigm or to a recessive one. Potentially, therefore, the genitive plural could provide a starting-point for the analogical creation of a whole recessive paradigm. In Kuryłowicz's view, the language exploited the accentual ambiguity of the genitive plural to create whole recessive paradigms just in those cases where this procedure would allow nouns that had acquired concrete meanings to be differentiated from those that had remained abstract. Kuryłowicz regards this process of differentiation as having occurred at the moment when the law of limitation came into force, this being the moment when the genitive plural in *-ᾱ́ων* became ambiguous.[4]

Superficially, Kuryłowicz's assumption that a phonological or morphological neutralization was systematically exploited can be compared with (for example) the traditional view of how athematic verbal paradigms were often thematized in a number of Indo-European languages (e.g. Sanskrit and Greek), namely starting from a third plural form in **-ont(i)* that could be interpreted as either thematic or athematic.[5] However, in the case of thematization we have to do with straightforward transference from an unproductive morphological class (athematic inflection) to a productive one (thematic inflection). While some verbs resist transference to the thematic type (typically because they are core vocabulary items such as the verb 'to be'), the neutralization between thematic and athematic types is exploited only to create thematic paradigms, not to differentiate formally between semantically distinct classes of verbs. A genuine parallel for the kind of process envisaged here seems difficult to find independently of Kuryłowicz's explanations of accentual phenomena, and yet we might expect such parallels, given that neutralizations of phonological and morphological oppositions occur widely outside the area of accentuation.

If it is indeed the case that *-ᾱ-/-η-* derivatives that have acquired a concrete meaning are more likely to be recessive than those retaining their original abstract meaning, an alternative to Vendryes's explanation or that of Kuryłowicz would be an explanation along the same

[4] Compare the analogical mechanisms he held to operate in *o*-stems, summarized on pp. 151–3.

[5] See Sihler (1995: 494, 520). There is no general agreement on whether the 3rd person pl. ending in the form **-onti* (as opposed to **-enti* or **-nti*) should be reconstructed for any IE athematic paradigms, but see Sihler (1995: 467).

lines as the one I have suggested for the relationship between meaning and accentuation in nouns with -*μο*-. The suffix -*ᾱ*-/-*η*- productively forms abstract nouns on the basis of verbal stems. Where the base verb survives in Greek, there is a clear semantic relationship between the meaning of the verb and the productive meaning of a derivative in -*ᾱ*-/-*η*-: the -*ᾱ*-/-*η*- derivative denotes the action performed by the subject of the verb, or (in the case of a stative verb) the state of the subject. There is thus a coherent derivational class of nouns characterized formally by the suffix -*ᾱ*-/-*η*- and semantically by abstract meaning. On the other hand, there are -*ᾱ*-/-*η*- nouns that have lost the semantic characteristic of this class: their meaning has changed so that it is no longer typical of the class of -*ᾱ*-/-*η*- derivatives. These nouns have come to denote some concrete object connected in some way with the action expressed by the verb, but the meaning is no longer predictable from that of the verb. We may say that the suffix -*ᾱ*-/-*η*- was inherently accented and that the reason why many words that have lost their abstract meaning have recessive accentuation instead of the expected final accentuation is that in these words the suffix has lost its synchronic identity and a default recessive accent may, but need not, result.

What has been said so far may be brought together with the observation that -*ᾱ*-/-*η*- derivatives built on an *o*-grade root are particularly resistant to recessive accentuation. The suffix of deverbatives in -*ᾱ*-/-*η*- was always open to reinterpretation as non-suffixal, since the language already had many words ending in non-suffixal -*ᾱ*-/-*η*-. The same is less true, however, for deverbative words that not only had an element -*ᾱ*-/-*η*- but also an *o*-grade root. This type was doubly characterized as belonging to the class of deverbatives in -*ᾱ*-/-*η*-, since *o*-grade root vocalism is not a systematic characteristic of other words ending in -*ᾱ*-/-*η*-. *O*-grade root vocalism remained productive (although not obligatory) for -*ᾱ*-/-*η*- deverbatives during the historical period. The productivity of this pattern implies that *o*-grade vocalism retained a synchronic connection with the deverbative suffix -*ᾱ*-/-*η*-, and this synchronic connection allowed *o*-grade vocalism to contribute to the synchronic identifiability of the suffix -*ᾱ*-/-*η*-.

If an explanation along these lines is correct, the group of words formed with the suffix -*ᾱ*-/-*η*- would provide a non-thematic example of the tendency for 'demorphologization' and the subsequent possibility of a change to recessive accentuation in words that, for one reason or another, are not easily identifiable as belonging to a class of words with a particular inherently accented suffix. In the case of the deverbative suffix -*ᾱ*-/-*η*-, a semantic factor promoting 'demorphologization' would be the loss of abstract meaning, while a formal factor would be the presence of a root vocalism other than the *o*-grade.

13.2.2 Personal names

In Greek, adjectives are often, and nouns occasionally, employed as personal names. Adjectives and nouns that have come to be used as personal names often have recessive accentuation where the adjective or noun in its ordinary use has a non-recessive accent. For example, the adjective *φαιδρός* 'bright' is finally accented but the personal name *Φαῖδρος* is recessive.

Vendryes (1904: 153) attributed this phenomenon to a general tendency for nouns to be distinguished from personal names by means of a change of accent. However, Vendryes's view fails to account for the fact that in almost all cases where a personal name differs in accentuation from the 'ordinary' word with which it was originally identical, the name has recessive accentuation whereas the ordinary word is non-recessive. There are plenty of recessive adjectives and nouns used as personal names, but in such cases the name almost always simply retains recessive accentuation. If the language had a particular tendency to distinguish names from ordinary adjectives and nouns, it is not clear why this tendency should not have been felt in the case of a name such as *Πρῶτος* or *Πλοῦτος* (for which see Chandler 1881: 95), which correspond to the common adjective *πρῶτος* 'first' and the common noun *πλοῦτος* 'wealth'.[6]

A satisfactory theory ought, therefore, to take into account the fact that the change of accent found in personal names such as *Φαῖδρος* beside the adjective *φαιδρός* 'bright' has a consistent direction: the tendency is for personal names to acquire recessive accents if they do not have them to begin with. An alternative, and from this point of view preferable, theory of the prevalent recessive accentuation of Greek personal names, which goes back to Wheeler (1885: 51) and has often been repeated since (e.g. Kuryłowicz 1968: 93), is that the recessive accent originated in the vocative case. Certain Greek nouns, such as *πατήρ* 'father', have a recessive accent in the vocative (*πάτερ*) although the rest of the paradigm is non-recessive. In Vedic Sanskrit, vocatives are either unaccented or are accented on the first syllable; either of these accentual possibilities could have been continued by recessive

[6] Vendryes (1904: 154) takes pains to point out that there are *some*, although not many, instances of non-recessive personal names beside recessive common adjectives or nouns. The examples he cites are *Σῳζομενός* (cf. *σῳζόμενος* 'saved'), *Σκυμνός* (cf. *σκύμνος* 'cub'), *Ἀμφοτερός* (cf. *ἀμφότερος* 'both'), and *Ἄξίος* (cf. *ἄξιος* 'worthy'). Kuryłowicz (1935: 186–7) argues convincingly that in these cases it is the personal names that have retained their original (or more original) accentuation and the corresponding ordinary words that have acquired recessive accentuation. (On *Σῳζομενός* so already Wheeler 1885: 52.) These words do not, therefore, provide examples of change from recessive to non-recessive accentuation in personal names.

accentuation in Greek.[7] Recessive accentuation in vocatives is clearly an archaic feature for Greek. It survives only in a few nouns, especially in words such as kinship terms in which the vocative was in frequent use. Elsewhere, the accent of the vocative has generally been reassigned by paradigmatic levelling to the same syllable as that of the nominative (thus the vocative of *νεανίσκος* 'young man' is *νεανίσκε*). Wheeler's argument rests on the idea that personal names are particularly often used to address people. The vocative therefore occurred particularly frequently, and this frequency of use could have made it possible for paradigm levelling in personal names to act in the direction of the vocative. Whereas in a word like *νεανίσκος* 'young man' the vocative would have replaced its accent with that of the other cases, in the name *Φαῖδρος* the non-vocative cases would have replaced their accentuation with that of the vocative.

Wheeler's view is at first sight attractive, until we observe that names of places show exactly the same tendency to recessive accentuation as do personal names:

Μάκρον (promontory of Sicily; cf. *μακρός* 'big')
Λεύκη (island in Mysia; village in Arabia; cf. *λευκός* 'white')
Δολίχη (alternative name for the island of Ikaros and for Crete; cf. *δολιχός* 'long')

I do not deny that place names could be used, on especially emotive occasions, in the vocative, but would deny that the vocatives were ever used sufficiently often to become starting-points for paradigmatic levelling of the accent.[8]

The standard explanations for the tendency of personal names to replace non-recessive with recessive accentuation thus leave various problems unanswered, but we might ask whether it is again significant that it is precisely the most generally regular or 'default' accent for the language that names are liable to acquire. The adjective *φαιδρός* 'bright' has an inherently adjectival suffix *-ρο-*; the suffix is identifiable on both formal and functional grounds. The name *Φαῖδρος*, on the other hand, is not an adjective. Although names may originate as common

[7] Wackernagel (1877) established with reference to the finite verb that Gk recessive accentuation could continue lack of accent; see p. 87.

[8] The grammatical tradition about the accentuation of place names raises some special problems that cannot be addressed here; for some relevant remarks see Dyck (1982: 273). For present purposes the important point is merely that the grammatical tradition on the accentuation of place names suggests a tendency to recessive accentuation exactly like that of personal names. Regardless of the grammarians' source of information on the pronunciation of any individual place name (and whether their prescription corresponded to the pronunciation of local people or merely seemed correct to Greek speakers reading the name without being used to hearing it pronounced), it is clear that there was some degree to which place names tended to acquire recessive accents.

nouns or adjectives, with appropriate meanings, they come to have the main function of denoting an individual and the kind of meaning they have, if any, is controversial. Common adjectives or nouns used as personal names are therefore good candidates for 'demorphologization', and for the subsequent potential replacement of a non-recessive by a recessive accent, i.e. by the default accent for the language.

It is of interest in this context that personal names formed with certain suffixes are never assigned recessive accentuation. Among these are the (mostly Homeric) names in -εύς and the feminine names in -ώ (e.g. Ἀχιλλεύς, Ἐρατώ). These suffixes are more distinctive in purely formal terms than, for example, -ρο- or -το-; given a Greek word ending in -εύς or -ώ, it would be more difficult to lose the sense of the presence of a suffix -εύ- or -ώ than it would be to lose the sense of the presence of the suffix -ρο- in a word terminating in -ρος. Greek has many *o*-stem nouns and adjectives, by no means all of them having a suffix of the form consonant + -*o*- or vowel + -*o*- rather than simply the thematic vowel -*o*-. I suspect that for these reasons the suffixes -εύ- and -ώ retained their synchronic identity when they appeared in names as well as in the non-onomastic vocabulary.[9] Because the presence of one of these suffixes continued to be felt, a personal name formed with -εύ- or -ώ retained the lexical accent associated with the suffix.

13.3 Cross-linguistic parallels

An advantage of the general principle of accentual change suggested here is that we do not have to look far for examples of similar phenomena in other languages. I mention here a simple example from Latin (illustrating the possibility of a change of accent following 'demorphologization') and a perhaps more interesting example from English (illustrating the possibility of a relationship between token frequency and accent shift following 'demorphologization').

13.3.1 Latin enclitics

In classical Latin, the position of the word accent was essentially determined purely phonologically. If the penultimate syllable was heavy, it

[9] Names in -εύς were essentially not productive in onomastics after the Homeric period (see Perpillou 1973: 44–5), but the suffix remained productive outside onomastics and -εύς names of Homeric heroes remained an important part of the Gk vocabulary. Despite the lack of productivity of the suffix in naming, therefore, there remained a synchronically significant group of nouns in -εύς to which the Homeric names could easily (because of the synchronic identifiability of the suffix) be taken to belong, and which I take to have played an important role in maintaining the non-recessive accentuation of the Homeric and mythological -εύς names far beyond the period of productivity of -ευ- as an onomastic suffix.

carried the accent. Otherwise, the accent fell on the antepenultimate syllable. It is almost vacuous to say that the default position for the Latin accent was the penultimate syllable, if heavy, and otherwise the antepenultimate.

Although word-internal morphological structure did not affect the position of the Latin accent, our grammatical sources tell us that the presence of an enclitic following a full phonological word (or 'host' word) caused the accent of the full word to fall on its final syllable (the last syllable *before* the enclitic), regardless of the weight of this syllable—thus *uírum* 'man' (acc. sg.) but *uirúmque* 'and the man'; *lī́mina* 'thresholds' (nom.-acc. pl.) but *līminá que* 'and the thresholds'.[10] The internal structure of a host-plus-clitic group was therefore relevant to accentuation as the internal structure of a phonological word alone was not.

We are told that the sequence *itaque*, which historically consisted of the adverb *ita* 'thus' followed by the enclitic *-que* 'and', had different accentuations corresponding to different meanings.[11] In the meaning 'and thus', the accent fell on the syllable *-ta-*, whereas in the more common idiomatic meaning 'therefore' the syllable *i-* was accented. In the meaning 'and thus', the word is treated accentually as a combination of host plus clitic. Both host and clitic are semantically as well as formally identifiable, and the group therefore retains synchronically its analysis as a sequence of host plus clitic. In the meaning 'therefore', however, the group is treated accentually as a single phonological word; this is a natural consequence of the development of an idiomatic meaning that is not predictable from the meanings of the component parts. The component parts have become semantically irrelevant and the group has lost its synchronic status as a sequence of host plus clitic. In Latin, a host-plus-clitic sequence that came to be synchronically analysed as a single word would have been under enormous pressure to replace its accentuation with the accent assigned to single phonological words—with the 'default' accent for the language—since in Latin there are virtually no lexical accents.[12] The process by which a host-plus-clitic group comes to be analysed as a single word and changes its accentuation accordingly is similar to the process of 'demorphologization' we have seen in Greek, with the possibility of a subsequent change to recessive accentuation.

[10] See the sources cited by W. S. Allen (1973: 158–61; 1989: 87–8), with further bibliography and some discussion. Probert (2002) also gives sources and defends the Latin grammarians' rule about the accentual effect of an enclitic against a modern tendency to regard it as invented.

[11] For sources and discussion, see Bernardi Perini (1964: 42–3); Probert (2002).

[12] On the few exceptions that arose through loss of the final syllable, see Ch. 2 n. 19.

13.3.2 English verbs with *-ate*

Over at least the last hundred years, many English verbs formed with the suffix *-ate* have undergone a change from accentuation on the penultimate syllable to final accentuation if disyllabic or antepenultimate accentuation (with a secondary accent on the final syllable) if trisyllabic: *díctate* has become *dictáte*; *concéntrate* has become *cóncentràte* (see Gąsiorowski 1997). Phillips (1998*a*) studies the changing stress patterns of these words in relation to their token frequencies in a very large corpus of English,[13] and finds that words with high token frequencies have changed before those with low token frequencies. She further suggests (1998*a*: 229–30; cf. Phillips 1998*b*: 379; 2001: 125) that more frequent words such as *concentrate* and *dictate* tend to undergo less synchronic analysis than infrequent words such as *eructate* and *formate* (for the general principle here see Bybee 1985: 117–24), and that it is the loss of synchronic analysis that motivates the changes of stress pattern. The innovated stress patterns of disyllabic and trisyllabic verbs with *-ate* are the most regular patterns for *unanalysed* disyllabic and trisyllabic verbs of English; these verbs are stressed as if their morphological composition was irrelevant to their accentuation.

Phillips's analysis of the changes in the stress patterns of English verbs with *-ate* is similar in several respects to my analysis of the changes in accent patterns of Greek nouns with *-ρο-*, *-το-*, and *-νο-*. In both cases loss of synchronic morphological analysis is seen as a precursor to a change in accentuation. In both cases infrequent words are resistant to the change in accentuation, and this resistance is attributed to the lower tendency of infrequent words to lose their synchronic analysis.

There is, however, also a difference between Phillips's results and mine. Phillips found as a quite general rule that the more frequent the verb with *-ate*, the earlier the change in stress pattern. By contrast, I have found that Greek nouns with *-ρο-*, *-το-*, and *-νο-* resist a change to recessive accentuation not only if they are very infrequent but also if they are very frequent. I have ascribed the resistance of very *frequent* words to this change not to any resistance to demorphologization but to resistance to the actual accentual change that may follow demorphologization.

It is worth asking why Phillips's results and mine differ in this respect. If I am right in thinking that the changing stress patterns of English verbs with *-ate* and those of Greek nouns and adjectives with *-ρο-*, *-το-*, and *-νο-* are very similar in character and motivation, it is

[13] Her word frequencies come from a 1993 version of the *CELEX* lexical database on CD-ROM (see References, under *CELEX Lexical Database*), which bases its frequencies on the number of occurrences in the *COBUILD* corpus of about 17.9 million words; see Phillips (1998*a*: 225–6).

surprising that they do not display the same frequency effects. To spell the problem out more fully, I take the changing stress patterns of English verbs with *-ate* to be due to two essentially separate processes that need to be distinguished:

(*a*) Loss of synchronic morphological analysis in a (historically) complex form, e.g. [concéntr[ate]] → [concéntrate]. A necessary, but not sufficient, condition for (*b*).
(*b*) In words that are not synchronically analysed as complex forms, replacement of now irregular by regular accentuation: [concéntrate] → [cóncentrate].

Process (*a*) is resisted by the *least* frequent items, but the Greek data we have seen suggest that a process of type (*b*) should be resisted by the *most* frequent of those items that have undergone process (*a*). If so, why is this effect not seen in Phillips's study?

One answer may be that since the changing stress patterns of English verbs with *-ate* have progressed very far very rapidly, some frequency effects may no longer be discernible from the available evidence. In this respect one might compare our findings for Greek nouns with *-λο-*, which display a massive incidence of change to recessive accentuation by our earliest evidence and do not show the same frequency effects as words with the suffixes *-ρο-*, *-το-*, and *-νο-* (see Ch. 9 and pp. 236–7, 293). It is also worth comparing Ogura's (1995: 32) suggestion that it is difficult to discern the paths by which rapid sound changes have progressed because their rapidity makes them difficult to observe in progress, or Phillips's remark (1998*b*: 375) that 'if one does not find lexical diffusion, it does not necessarily mean that the sound change was not at one time lexically diffused'.

However, there is an interesting point in Phillips's data on disyllabic verbs with *-ate* in American English, where the stress patterns have been changing more slowly than in British English. Phillips studies the stress patterns of fifteen disyllabic verbs with *-ate* as reflected in six American dictionaries (from 1806, 1828, 1909, 1953, 1961, and 1993) in relation to their frequencies.[14] I reproduce her table of results here as Table 13(a) ('+' indicates final-syllable stress; '–' indicates initial-syllable stress). The data are, as she says, much scantier than those for British English because most of the words in her list simply have not

[14] She limits her list of disyllabic words to those with closed first syllable because 'This subset was the largest phonetically definable group in my study and showed the clearest lexical diffusion by frequency' (1998*a*: 226), and omits verbs ending in *-late* (specifically, *translate*, *inflate*, and *conflate*) because verbs ending in *-late* showed overwhelming final stress (1998*a*: 227). Given these restrictions, she is left with a list of fifteen words.

Table 13(a). *American English, disyllables in* -ate

VERB	FREQ.	1806	1828	1909	1953	1961	1993
frustrate	666	–	–	–	–	–	–
dictate	233	–	–	–	–/+	–/+	–/+
prostrate	39	–	–	–	–	–	–
pulsate	36	–	–	–	–	–	–/+
stagnate	29	–	–	–	–	–	–
fixate	20				–	–	–
truncate	15	–	–	–	–	–	–
mandate	9				–	–/+	–
lactate	7				–	–	–
palpate	5	–	–	–	–	–	–
filtrate	0	–	–	–	–	–	–
formate	0					–	
gestate	0				–	–	–
lustrate	0	–	–		–	–	–
testate	0				–		

Source: B. S. Phillips, 'Word Frequency and Lexical Diffusion in English Stress Shifts', in R. M. Hogg and L. van den Bergen (eds.), *Historical Linguistics 1995*, ii: *Germanic Linguistics* (1998), 227. Reprinted with kind permission from John Benjamins Publishing Company, Amsterdam and Philadelphia (www.benjamins.com).

changed stress pattern, but she notes that 'the words showing the shift are in general more frequent words' (1998*a*: 227). This is to say, three of her fifteen words show some evidence of beginning to change stress pattern: *dictate* (the second most frequent of her words), *pulsate* (the fourth most frequent), and *mandate* (the eighth most frequent). The words with the lowest seven frequencies show no evidence of having changed stress pattern.

I wonder, however, whether it is an accident that the *most* frequent word in this list, *frustrate* (whose frequency is almost three times as great as that of the next most frequent word, *dictate*), shows no sign of changing its stress pattern in American English although *dictate* has been showing signs of changing since 1953. Furthermore, I wonder whether it could be significant that the only word in this list to have shown signs of changing as early as 1953 is almost six times as frequent as the word of the next lowest frequency (*prostrate*) as well as almost three times less frequent than the word of next highest frequecy (*frustrate*). In other words, to judge by this limited quantity of data it looks as if this change has begun in American English neither at the top of the frequency range nor at the bottom, but squarely in the middle: exactly as we have seen for Greek nouns with -*ρο*-, -*το*-, and -*νο*-.

More studies obviously need to be done using more data, but Phillips's results are at least suggestive of a change very similar in character to the change to recessive accentuation found in Greek nouns with *-ρο-*, *-το-*, and *-νο-*, and possibly a very similar path of change.

13.3.3 Cross-linguistic parallels: summary

'Demorphologization' is a normal linguistic process. The potential for subsequent replacement of a non-default accent by the default accent for the language is also normal for languages in which the internal structure of a word is relevant to its accentuation. Even where such is not the case, as in classical Latin, the structure of a unit larger than the word (whether a host-plus-clitic group or simply a group of words) may be relevant to its accentuation. If such a larger unit ceases to be synchronically analysed as a larger unit and simply becomes a word, a change of accentuation is often a consequence.

The frequency effects observed for the change to recessive accentuation in nouns with *-ρο-*, *-το-*, and *-νο-* can be interpreted very successfully in terms of the different frequency effects of (*a*) demorphologization, and (*b*) subsequent regularization of the accent. As far as I am aware, no other study has so far clearly demonstrated the same U-shaped frequency effect for a similar change in another language, but a suggestion of such an effect arises from Phillips's study of English verbs with *-ate*. The existence of historical information on English phonology, and of English frequency data based on large corpora, should provide a serious chance to replicate the results obtained here for Greek in the case of similar changes in English. In order to demonstrate the presence or absence of such effects beyond any doubt, such studies would need to be based on large quantities of data.

13.4 Consequences for Indo-European accentology

The process of change to default accentuation after 'demorphologization' continues into modern Greek.[15] For example, the adjective *εμπορικός* 'commercial', with the inherently accented adjectival suffix *-ικο-*, is finally accented. The substantivized neuter *εμπόρικο* 'shop selling textiles', however, has the accent three syllables from the end. Similar examples involving the suffix *-ικο-* may be cited. Beside an adjective *ανταρτικός* 'rebel' there is a noun *αντάρτικο* 'rebel forces';

[15] I take modern Greek to have a default accent on the third syllable from the end of the word, regardless of the historical lengths of the vowels involved. This means that some words that had a default accent in ancient Greek now have a lexical accent. For example, the accent of the gen. sg. *ἀνθρώπου* 'man' was in ancient Greek simply a default accent, but in modern Greek it is the result of an accentual characteristic of the genitive singular ending *-ου* (so Warburton 1970: 110–11).

beside *ζωολογικός* 'zoological' there is *ζωολόγικος* 'zoologist'.[16] The process is quite ordinary, and it is not surprising to find that it did not happen only at one moment during the history of Greek. This being the case, however, we should ask whether the process had already begun in Indo-European or whether it belongs entirely within the internal history of Greek. An adequate answer to this question will not be attempted here, but the following observations may be made.

I have argued that in Greek certain categories of word were originally formed with an inherently accented derivational suffix, as a result of which they were accented on the final syllable. This final accentuation was unstable, however, in cases where the suffix no longer retained its original function or meaning. The case of substantivized adjectives formed with an inherently adjectival suffix provides an example of such accentual instability. Some of the nouns formed with these 'adjectival' suffixes are, however, attested *as nouns* in more than one Indo-European language, and the meanings found in different languages correspond closely. For example, Greek *ξυρόν*, *τό* 'razor' corresponds exactly in both form and meaning, apart from a difference of gender, to Sanskrit *kṣurá-* m. 'razor'. Greek even has a rarer variant *ξυρός*, which matches the masculine gender of the Sanskrit form. If words such as this were ever adjectives, they were substantivized already in Indo-European, and it has been argued that at least some of them (including the word for 'razor') were actually created *qua* nouns (Nussbaum1976: 109–10, quoted on pp. 156–7). Given that the existence of nouns with the suffixes we have called 'adjectival' is likely to be already a feature of the parent language and not only of the daughter languages, consideration of the accentuation patterns attested for words of this type in different branches of Indo-European might tell us something about the Indo-European origins, if any, of recessive accentuation for such nouns with 'adjectival' suffixes.

Logically, there are four situations that may arise when we have a word equation between Greek and another language that preserves something of the Indo-European free accent system:

- non-default accent in Greek; non-default accent outside Greek
- non-default accent in Greek; default accent outside Greek
- default accent in Greek; non-default accent outside Greek
- default accent in Greek; default accent outside Greek

Listing possibilities in this way requires an assumption that Indo-European had a default position for the accent, and that this default

[16] These data come from Pring (1982). Many of the medieval and modern Greek phenomena discussed by Dieterich (1904) are of a similar kind.

accentuation is continued by some default accent in each of the daughter languages, or at least in each of those that are relevant for the reconstruction of the Indo-European accent system. I have mentioned in passing (Ch. 5 n. 25) an argument of Halle's (1989: 165–6) supporting the hypothesis that an accent on the initial syllable of the word was a default accent for Indo-European. Without entering into a detailed discussion of this point, I shall use at least as a provisional hypothesis the notion of a default initial-syllable accent for Indo-European.

Since neither Vedic nor proto-Germanic limited the distance from the end of the word where the accent could fall, a word-initial accent attested either for Vedic or, indirectly, for proto-Germanic can potentially continue a word-initial accent of Indo-European. Since Greek introduced the law of limitation, an Indo-European word-initial accent cannot always be continued by a word-initial accent in Greek. It can, however, always be continued by the Greek recessive accent (as in *φερόμενος* 'carried'; cf. the Vedic cognate *bháramāṇaḥ*), which also took over the function of default accent.

Let us now consider some of the word equations between Greek and Vedic or Greek and Germanic that relate to nouns formed with the 'adjectival' suffixes we have studied. I shall take word-initial accentuation attested in Vedic or indirectly in Germanic as the equivalent of the Greek recessive accent in continuing the default accent of Indo-European. All four of the logical possibilities enumerated above are in fact attested, as Table 13(b) shows. The least securely attested pattern, for the suffixes studied, is that involving default accentuation both in Greek and elsewhere (Table 13(b)iv). For all the other possibilities, one can cite certainly exact equations involving words whose internal structure is not in doubt; these are the word equations included in Table 13(b)i–iii. For the fourth possibility, however, the only word equations that can be cited either involve words for which *-ro-* may or may not be suffixal (*κάπρος*) or are of uncertain validity (*οἶτος*).

The existence of word equations of the types shown in Table 13(b) i–iii suggests that nouns with the adjectival suffixes *-ro-* and *-no-*, at least, acquired default accents at least to some extent on a language-specific basis. A default accent may be attested for neither member of the equation (*ξυρόν* 'razor' : Skt *kṣurá-* m. 'razor'), and where default accentuation is attested we may find it only outside Greek (*ἀγρός* 'field' : Skt *ájra-* m. 'field'; *ἑανός* 'fine robe' : Skt *vásana-* n. 'garment') or only in Greek (*τέκνον* 'child' : OHG *thegan* etc. < **tek̂nó-* 'servant'). It is possible that some substantivized adjectives acquired default accentuation already in Indo-European. If either of the word equations given in Table 13(b)iv could be shown to be a genuine example we would have some evidence in favour of this possibility.

Table 13(b). *Word equations between Greek and Sanskrit or Germanic nouns continuing IE 'adjectival' suffixes* *-ro-, *-to-, or *-no-

Greek	Other IE language(s)
i. *Non-default accent in Greek : 'non-default' accent elsewhere*	
ξυρόν (occasionally m. *ξυρός*) 'razor'	Skt *kṣurá-* m. 'razor'
ii. *Non-default accent in Greek : 'default' accent elsewhere*	
ἀγρός 'field'	Skt *ájra-* m. 'field'
ἑανός 'fine robe'	Skt *vásana-* n. 'garment'
iii. *Default accent in Greek : 'non-default' accent elsewhere*	
τέκνον 'child'	ON *þegn* 'man, servant', OHG *thegan* 'warrior, servant', etc. (< *$te\hat{k}$nó-)
iv. *Default accent in Greek : 'default' accent elsewhere*	
κάπρος 'boar'	ON *hafr* etc. (<**kápro-*) 'he-goat'[a]
οἶτος 'fate, doom'	Goth. *aiþs*, OHG *eid* etc. (< *(H_1)oíto-) 'oath'[b]

[a] Internal structure uncertain; *-ro-* may not be suffixal, but see Table 6(a) note e.
[b] Equation not certain, for semantic reasons (cf. Table 7(a)ii with note h).

Whatever the situation in Indo-European, one clear conclusion is that more work on the accent systems of individual languages, and the pressures operating within them, is needed before the accentual behaviour of substantivized adjectives in those languages can be taken as evidence for any Indo-European procedure resulting in nouns being accented differently from similarly formed adjectives (cf. pp. 150–3). Even where similar patterns (e.g. default accentuation for some substantivized adjectives) are found in different Indo-European languages, the evidence from word equations suggests that the specific lexical items affected do not always correspond. Given similar systematic pressures it is quite possible that different languages have innovated in similar ways.

13.5 Consequences for linguistic theory

Recently, there has been a debate about the nature of inflectional and derivational morphemes. Are inflectional morphemes lexically listed items, which can be selected from the lexicon and added to other linguistic material? Or are they phonological operations on lexically

listed items, not themselves listed in the lexicon? And what about derivational morphemes?

Since L. Bloomfield (1926), a morpheme has traditionally been regarded as a 'recurrent (meaningful) form which cannot in turn be analyzed into smaller recurrent (meaningful) forms' (p. 155). Although a distinction between 'bound' and 'free' morphemes has also been recognized since L. Bloomfield (1926: 155), inflectional and derivational morphemes have been regarded as units that are essentially similar to free morphemes. In this conception word-formation, like sentence-formation, consists of the selection and combination of essentially distinct units.

This view of inflectional and derivational morphemes as combinable units of form and meaning, like free morphemes, has been attacked from various directions. Beard (1995: 378) points out, *inter alia*, that many grammatical morphemes (whether inflectional or derivational) lend themselves to analysis as operations rather than as combinable items. For the sake of 'the simplest and most consistent universal theory of morphology', he proceeds to deny the status of listable objects to *all* grammatical morphemes, both those that *could* easily be regarded as listable objects and those that could not:

> bound derivational morphemes must be described as processes distinct from the selection-copy process that accounts for the presence of lexical items in phrases. Affix-spelling and the spelling of free morphemes may be described as operations; however stem mutations, revowelling, prosodic morphemes, and reduplication cannot be described as lexical selection-copying without ad hoc enrichment of both the lexicon and the phonological realization rules. It follows that the simplest and most consistent universal theory of morphology will represent grammatical morphemes as purely phonological operations on lexemes or phrasal positions, not as listable objects.

Among the opponents of Beard's view, Maiden (1999*a*, *b*; 2001) has collected a number of instances in which derivational affixes apparently behave as if they consist of listable units of form and meaning.[17] For example, he suggests (2001: 38–41) that the unexpected voicing of *ç* to *z* in a number of Old Spanish derivational suffixes is the result of a sporadic sound change that affected (*a*) a small number of lexical stems, and (*b*) a number of suffixes. Suffixes that undergo the voicing do so in all their occurrences, regardless of the word in which they appear. Maiden (2001: 41) infers that 'voicing is apparently "blind" to the lexeme in which the suffix occurs, it simply affects the suffix directly, in just the same way that it affects a lexeme like *lizo*'.

[17] He allows that the 'meaning' of a derivational suffix may be rather different from that of a standard lexeme and may be 'intramorphological' rather than 'extramorphological'. For example, the 'meaning' of a suffix may be simply the fact of being a suffix.

Maiden's explanation of voicing in Old Spanish suffixes suggests that derivational suffixes are items that are either affected or unaffected by a lexically diffusing sound change, just as morphologically simple words are either affected or unaffected. Because, on his account, a derivational suffix is either affected or unaffected, it is affected either in all the words in which it occurs or in none.

On the basis of the studies on Greek accentuation presented in this book, it was suggested above (p. 292) that lexical accents are most stable when they attach to frequently occurring morphemes and least stable when they attach to infrequently occurring morphemes. If so, we would have one more instance in which derivational suffixes behave as units in fundamentally the same way as morphologically simple stems. For a derivational suffix to behave as a frequent item it is not necessary that any of the individual words in which it occurs be of high frequency. The suffix behaves as an item that can be frequent or infrequent in its own right, regardless of the particular words in which it occurs.

13.6 Consequences for the understanding of accentual change

I have mentioned (Ch. 5 n. 25) Halle's (1989: 165–6) view that the consistent initial accent found in a number of languages from several different branches of Indo-European resulted from the loss of lexical accents with a concomitant generalization of initial accentuation, which he takes to have been the default accent pattern for Indo-European. The process whereby a morphological accent system changes to a fixed initial accent system has been studied by Hutton (1995) in the context of the proto-Germanic change to fixed initial stress. Hutton (pp. 202–5) considers whether the proto-Germanic stress shift was 'catastrophic' or 'gradual'. He assumes that a 'catastrophic' stress change would involve an instantaneous change in the fundamental stress rules. Under the new rule system lexical accents would no longer surface and would consequently cease to exist. A 'gradual' stress shift would involve lexical accents being lost one by one while the fundamental accent rules remained unchanged. Hutton concludes the discussion by suggesting that the proto-Germanic stress shift probably involved a gradual loss of lexical accents in its initial stages and then a shift to a different fundamental rule system at a later stage, when lexical accents had been eliminated to the extent that those remaining had become marginal.

Our investigation of ancient Greek accentuation suggests that loss of lexical accents was an ongoing process during the history of Greek, and we have seen that the loss of lexical accents is a normal and unsurprising phenomenon in languages with morphological accent systems. It is

worth asking whether such languages are necessarily tending towards the eventual elimination of lexical accents altogether.

Greek has developed for two millennia since the period represented by our evidence for the ancient accent system, and yet lexical accents have not, or not yet, been lost. On the other hand, other factors have intervened. The loss of distinctive vowel length means that a suffix such as the genitive singular ending *-ου*, which was underlyingly unaccented in the ancient language, has become lexically pre-accented. In the absence of an inherently accented derivational suffix, a word ending in *-ου* is accented on the syllable preceding *-ου*, as in *ἀνθρώπου* 'man' (gen. sg.).The failure of the accent to fall on the third syllable from the end of the word is no longer determined by the length of the vowel, since vowel length is no longer distinctive, but by a lexical feature of the morpheme itself (see n. 15 above). The loss of distinctive vowel length has thus increased the degree to which morphological structure is relevant in determining the accentuation of a Greek word, and this process can only have counteracted any progression in the direction of a fixed-accent language.

In addition, it was suggested above (p. 292) that lexical accents are relatively stable in frequently occurring derivational suffixes. Where a word, historically speaking, contained an inherently accented suffix but is attested with recessive accentuation I have argued that the word is no longer synchronically analysed as containing the relevant suffix. The stability of the ancient Greek lexical accent in a derivational suffix such as *-το-*, as long as *-το-* is felt synchronically to be present in a word, is responsible for the absolutely consistent final accentuation of adjectives with *-το-*. These adjectives are naturally analysed synchronically as containing the suffix *-το-*, a fundamentally adjectival suffix. In order for ancient Greek to have been progressing towards a state of fixed accentuation, the stability of lexical accents would have had to be diminished even in very frequently occurring morphemes such as productive derivational suffixes. This crucial step was not taken, and it seems quite possible that a language can support a gradual but continual process of lexical accent loss in infrequent items while retaining a lexical accent system, as long as lexical accents remain stable in items of at least a certain frequency. What the crucial frequency is, and why some languages reach this point of accentual instability while others do not, are questions that may deserve further investigation.

13.7 A footnote: do the conclusions reached here imply the literal existence of synchronic morphophonological rules?

In the analysis presented here I have relied on notions that belong to rule-based models of phonological and morphological processing, and have made heavy use of the concept of 'default' rules. It is currently

much debated whether speakers' knowledge of the regularities of a language is supported by their use of mechanisms best described as synchronic rules, or rather by mechanisms best described as analogical in nature. One of the claims that has been made in favour of the literal validity of a rule-based rather than analogy-based model is that 'default' rules (*a*) exist, and (*b*) may apply when memory fails not only to forms similar to the ones to which they already apply (straightforward cases of 'analogy'), but also to forms displaying no close resemblance to others to which they already apply. For example, it is claimed that speakers of German make plurals in *-s* for new words (or words previously unknown to them) that, for one reason or another, do not fall under any of the more specific rules for German plural formation. The addition of *-s* is far from being one of the most frequently used means of forming plurals in German, and yet it has the status of the most *generally* regular (or 'default') pattern. In order to form its plural with *-s*, a new German word need not be similar to any other word that forms its plural with *-s*; it only needs to fail to meet the conditions under which any of the other plural-forming rules is appropriate (see Pinker 1999: 221–7, with bibliography).

Since my attempt to reconstruct some aspects of the prehistory of ancient Greek accentuation has been couched in the terms of a rule-based model, and depends on recessive accentuation being treated as the most generally regular, or 'default', accent rule for Greek, it is worth contemplating whether the ability of these rule-based notions to help explain some apparent oddities of ancient Greek accentuation actually adds to the arguments in favour of a rule-based model, or whether the rule-based language I have used has provided no more than a convenient means of discussing certain structural aspects of ancient Greek accentuation that could also have been described—perhaps even with more literal truth—in other terms.

In fact, I do not think that the conclusions drawn here *require*, and therefore speak particularly in favour of, a rule-based model of linguistic processing. In order to demonstrate this point, let us briefly sketch some of these conclusions in the terms of an analogy-based model. Suppose that at a certain stage of the language words synchronically analysed as having a particular suffix, say *-ρο-*, are usually accented on this suffix, but words with unanalysed stems are most often recessive. In a situation where memory fails, a word that is synchronically analysed as containing the suffix *-ρο-* will be accented on the suffix by analogy with other words with *-ρο-*, since these provide the closest models for the accentuation of a word with *-ρο-*. A word whose stem is synchronically unanalysed, however, will be accented when memory fails on the basis of its own closest models, which will be other unanalysed and usually recessive words. Now, a word which was once analysed as containing a particular suffix but which has undergone 'demorphologization' will be accented after 'demorphologization', if

memory fails, by analogy with other unanalysed and usually recessive words. A change from final to recessive accentuation may therefore occur in such a situation if (*a*) demorphologization has occurred, and (*b*) memory has failed. Demorphologization is resisted by very infrequent items, and memory failure does not tend to happen with very frequent items. The reasons for the U-shaped frequency distribution can thus be stated as well in the terms of an analogy-based model as in those of a rule-based model.

Furthermore, it is not *necessary* that the type of change described here involves the spreading of a pattern that is the most *generally* regular, or 'default', pattern for the language as a whole. In our Greek examples, it has happened to be the case that recessive accentuation is the most regular accentuation pattern across the Greek vocabulary and not only for, say, second-declension nouns. But let us imagine that at a certain stage of Greek unanalysed second-declension nouns (but not other sorts of words) were usually recessive while those analysed as containing certain suffixes (such as -*ρο*-) were usually accented on those suffixes. If a word that was once analysed as containing such a suffix was demorphologized, a change to recessive accentuation would become possible in exactly the way that we have seen, even though in this case recessive accentuation would be only a locally regular pattern applying to second declension nouns, not a globally regular one applying to the language in general.

The changing stress patterns of English words ending in *-ate* has been mentioned above as being probably connected with the loss of synchronic analysis of *-ate* as a suffix, and I have suggested that the path these changes took may provide a close parallel for the path taken by our Greek changes. But notice that after demorphologization and then a change of accent, disyllabic verbs with *-ate* have the stress on the second syllable (as in *dictáte*). This is the most regular stress pattern for unanalysed English disyllabic verbs, but by no means the most regular stress pattern for English disyllabic words in general; English disyllabic nouns tend to be stressed on the initial syllable. Indeed, disyllabic nouns borrowed with stress on the second syllable tend to develop stress on the initial syllable over time (cf. the nouns *aspect*, *compact*, *contents*, *essay*, *increase*, *instinct, protest*, and *record*, mentioned by C. Barber, quoted on p. 132).

The preceding investigations into the accentuation of some classes of Greek nouns and adjectives thus do not pretend to help determine the most accurate way to model human linguistic processing. But I hope that some progress has been made in the understanding of accentual change, and of the ways in which word frequency interacts with processes involving loss of analysis and subsequent regularization.

Had I realized when beginning to work on these questions that the result would be largely a study of this question of word frequency and

linguistic change, I would hardly have thought it sensible to start with an ancient language and prehistoric processes of change that need to be reconstructed out of the internal regularities and irregularities of a historical stage of the language. But I hope that the general results may be replicated using data from modern languages and more recent, documentable processes of linguistic change, and that in the meantime these investigations have shed some light on the prehistory of Greek.

Appendices

These appendices contain lists of the words used as data for Chapters 6, 7, 8, 9, and 11. To give a rough indication of the age of each word, and to assist in the finding of at least one attestation, a reference is given to an occurrence of each word in the century in which it first appears. (Dates of authors may be found in the list of ancient authors and works, pp. xiv–xxiv.) Attestations on inscriptions are not, however, taken into account (although they are occasionally mentioned). For each word, a note on etymology is given to justify its inclusion in a list of words formed, historically speaking, with a certain suffix. A note on the evidence for a word's accentuation is given where I have used evidence other than that of printed editions, or where I found more information in printed editions than simply a particular accent. The words in each section are ordered as a reverse index. The terminations -*ος* and -*ον* (and -*οι* and -*α*, for nouns attested only in the plural) have been neglected for the purposes of alphabetization.

APPENDIX 1

Data for Chapter 6

1.1 Adjectives with suffix *-ρο-*

The following abbreviations are used to encode information at the end of each entry: F = finally accented; R = recessive; U = uncertain or variable accentuation, i.e. both final and recessive accentuation are attested and no decision could be made between them. Where more than one accent is attested but some decision could be reached, this decision has been explained in the note and the word has been classified as either F or R. In cases of doubt I have aimed to err on the side of caution.

ἀργός, ή, όν < **ἀργρός* 'white, swift'. Hom. (*Il.* 18. 578+)+. ET.: From **H₂erĝrós* = Skt *ṛjrá-* 'swift'; cf. *ἀργί-πους* 'swift-footed'. ACCENT: Final accentuation is prescribed for a word *ἀργός* by Arc. 51. 17. It is not explicitly specified whether *ἀργός* 'white, swift' or *ἀ̓́ργός* 'idle' is at issue, but words giving any impression of being compounds are explicitly excluded from the relevant rule assigning final accentuation. Arcadius gives *μάργος* 'mad' (etymologized as privative *μα* plus *ἔργον* 'work') as an example of a compound word; it is therefore unlikely that by *ἀργός* he intends *ἀ̓́ργός* 'idle' (*α-* privative plus *ἔργον* 'work'). On the other hand, if Göttling's conjecture *Ἄργος* for MSS *γάγγος* or *σάγγος* is accepted at Arc. 51. 18, with Lentz (1867–70: i. 139. 33), one would need to take into account Sch. D. Thr. 130. 29–30 and Olympiodorus, *In Categorias* 33. 14, which juxtapose *ἀ̓́ργός* 'idle' and *Ἄργος* (proper name) in connection with accentuation. Manuscript evidence: e.g. *ἀργοὶ* at *Il.* 18. 578 in codex Venetus Marc. 822. F.

στιβαρός, ά́, όν 'strong, stout, sturdy'. Hom. (*Il.* 3. 335+)+. ET.: *στείβω* 'tread on'. F.

σοβαρός, ά́, όν 'rushing, violent'. Aristophanes (*Nu.* 406+)+. ET.: *σοβέω* 'move rapidly'. F.

λαγαρός, ά́, όν 'hollow, sunken'. Xenophon (*Cyn.* 4. 1)+. ET.: Related to *λαγαίω* 'release'; see Frisk (1960–72: ii. 68). ACCENT: Arc. 80. 15. F.

κλαδαρός, ά́, όν 'quivering'. Polybius (6. 25. 5)+. ET.: Root of *κλάω* 'break', perhaps with interference from *κραδαίνω* 'swing', etc.: Chantraine (1968–80: 537); cf. Frisk (1960–72: i. 864: inherited root-extension *-δ-*). F.

πλαδαρός, ᾱ́, **όν** 'moist, damp; insipid'. Hippocrates (*VM* 14 (i. 602. 10–11 Littré)+)+. Et.: **πλαδάω** 'be flaccid'. Accent: Arc. 100. 5 (not totally explicit, but non-recessive accentuation is definitely implied). F.

μαδαρός, ᾱ́, **όν** 'wet'. Hippocrates (*Epid.* 7. 83 (v. 438. 15 Littré)+)+. Et.: **μαδάω** 'be moist'. Accent: Hrd. **διχρ.** 16. 32. Cf. Arc. 100. 5. F.

φλυδαρός, ᾱ́, **όν** 'wet'. Hippocrates (in Galen 19. 152. 12). Et.: **φλυδάω** 'have an excess of moisture'. F.

νεαρός, ᾱ́, **όν** (and later contracted **νηρός**) 'young, fresh'. Hom. (*Il.* 2. 289)+. Et.: **νέος**, α, ον 'young; new' < **νέϝ-ος*. Cf. Arm. *nor* 'new' from **neu̯erós vel sim.*: Frisk 1960–72: ii. 306. F.

ἰθαρός, ᾱ́, **όν** 'cheerful, glad; pure'. Simias (*Greek Anthology* 15. 22. 6 = Simias 25. 6 Powell; with *v.l.* **καθαρᾶν**); restored and unaccented on papyrus at Alcaeus 5. 8 V.; comparative at Alcaeus 58. 18 V. The Myc. personal name *I-ta-ra-jo* may be a derivative, and if so would guarantee the antiquity of **ἰθαρός**. Et.: Root of **ἰθαίνω** 'have kind mind (?)' (Hesychius ι 382 Latte; on the meaning see Latte ad loc.). Skt *vīdhrá-* (= *vi-idhrá-*) n. 'clear sky, sunshine' is normally compared: see Chantraine (1968–80: 459); Mayrhofer (1986–2001: ii. 568–9). F.

λιαρός, ᾱ́, **όν** 'warm, lukewarm'. Hom. (*Il.* 11. 477+)+. Et.: Related to **ἐλιάνθη· ἐχλιάνθη** ('was warmed'; Hesychius ε 2059 Latte), but this verb is attested very late. Rhyming synonym of **χλιαρός** 'warm'. F.

χλιαρός, (ᾱ́), **όν** 'warm'. Ps.-Epicharmus (in Athenaeus 14. 648d = Ps.-Epicharmus fr. 289 K–A)+. Et.: **χλιαίνω** 'warm'; **χλιόεις** 'warm'. Accent: Arc. 80. 14–15. F.

μιαρός (and **μιερός**), ᾱ́, **όν** 'stained (with blood)'. Hom. (*Il.* 24. 420)+. Et.: **μιαίνω** 'to stain'. F.

ἀνῑᾱρός (and **ἀνιᾱρός**), ᾱ́, **όν** (and **ἀνῑηρός**, ή, **όν**) 'grievous, troublesome, annoying'. Hom. (*Od.* 17. 220+)+. Et.: **ἀνῑάω** 'grieve, distress', **ἀνί̄ᾱ** 'grief, sorrow'. Accent: Implied by Hrd. **διχρ.** 16. 33. F.

μνιαρός, ᾱ́, **όν** 'mossy'. *Greek Anthology* (6. 250. 3)+. Et.: **μνίον**, **τό** 'seaweed'. F.

βριαρός (and **βριερός**), ᾱ́, **όν** 'strong'. Hom. (*Il.* 11. 375+)+. Et.: **βριάω** 'make strong, be strong', **βρῑ́θω** 'be heavy', **βρῑ́ = τὸ βριθύ καὶ βριαρόν** 'heavy and strong' (Hesiod in Strabo 8. 5. 3 = Hesiod fr. 329 M–W). F.

λᾱρός, ᾱ́, **όν** 'pleasant to the taste, dainty, sweet'. Hom. (*Il.* 17. 572+)+. Et.: **ἀπο-λαύω** 'have enjoyment of'. From **λαϝαρός* or **λαϝερός*: Risch (1974: 69). Accent: Arc. 77. 16. Cf. Hrd. **μον.** 940. 26, with Lentz on 940. 22, 23. F.

φάλᾱρος, ᾱ, **ον** (Ionic **φάληρος**) 'having a crest or patch of white'. Theocritus (8. 27)+. Et.: **φαλ[λ]ός : λευκός** 'white' (Hesychius φ 122 Schmidt). Accent: Arc. (81. 13–14) prescribes recessive accentu-

ation for a word *φάληρος*, but this word appears in a list of recessive common nouns, proper names, and adjectives lacking a separate feminine form, so that *Φάληρος* as a proper name is probably meant. Schmidt capitalizes the word accordingly. R.

χαλαρός, ᾱ́, όν 'slack, loose'. Aristophanes (*Th.* 263+)+. ET.: *χαλάω* 'slacken'. ACCENT: Arc. 80. 14. F.

ἵλαρός, ᾱ́, όν 'cheerful, merry'. Xenophon (*Mem.* 2. 7. 12)+. ET.: Root of *ἵλαος, ον* 'propitious', *ἱλάσκομαι* 'appease', etc. F.

νᾱρός, ᾱ́, όν 'flowing, liquid'. Aeschylus (in Photius 286. 8 Porson = Aeschylus fr. 347 Radt; unaccented in the codex: see Radt's apparatus ad loc.); Sophocles (in e.g. Orion 110. 1 = Sophocles fr. 621 Radt). ET.: *νάω* 'flow'. ACCENT: Lehrs conjectured *νᾱρός* for MS *λαρός* at Hrd. *μον.* 940. 22–3 (see Lentz ad loc.), and Lentz (1867–70: i. 190. 14) conjectured *νᾱρός* for MSS *βλαρός* at Arc. 77. 17. F.

σθεναρός, ᾱ́, όν 'strong, mighty'. Hom. (*Il.* 9. 505)+. ET.: *σθένος, τό* 'strength, might'. F.

πιναρός, ᾱ́, όν 'dirty, squalid'. Cratinus (in Pollux 7. 28 = Cratinus fr. 388 K–A)+. ET.: *πίνος, ὁ* 'dirt, filth'. F.

σιναρός, ᾱ́, όν 'hurt, damaged'. Hippocrates (*Fract.* 33 (iii. 534. 3 Littré) +)+. ET.: *σίνομαι* 'harm'. F.

λαπαρός, ᾱ́, όν 'slack, loose'. Hippocrates (*Morb.* 2. 26 (vii. 40. 13 Littré) +)+. ET.: Root of *λαπάσσω* 'empty, soften'. F.

λιπαρός, ᾱ́, όν 'oily, shiny with oil'. Hom. (*Il.* 2. 44+)+. ET.: *λίπα* (adv.) 'richly(?)', *λιπαίνω* 'oil, anoint'. ACCENT: Arc. 80. 14. F.

ῥυπαρός, ᾱ́, όν 'filthy, dirty'. Teleclides (in Pollux 10. 164 = Teleclides fr. 3 K–A)+. ET.: *ῥύπος, ὁ* 'dirt, filth'. ACCENT: Hrd. *διχρ.* 15. 14, 16. 32–3. F.

γεραρός, ᾱ́, όν 'of reverend bearing, majestic'. Hom. (*Il.* 3. 170)+. ET.: *γέρας, τό* 'gift of honour'; *γέρων, ὁ* 'old man'. F.

μυσαρός (and **μυσερός**), **ᾱ́, όν** 'foul, dirty'. Herodotus (2. 37. 2)+. ET.: *μύσος, τό*, 'uncleanness'. F.

ψαφαρός, ᾱ́, όν 'friable, powdery'. Aeschylus (*Th.* 323)+. ET.: Root of *ψῆφος, ἡ* 'pebble'. ACCENT: Arc. 80. 15. F.

ψεφαρός/ψέφαρος, ᾱ, ον 'gloomy, cloudy'. Hippocrates (in Galen 19. 156. 6). ET.: *ψέφος, τό* 'darkness'. ACCENT: Kühn prints *ψέφαρα* at Galen 19. 156. 6. Schmidt (on Hesychius *ψ* 138 Schmidt) quotes the same word from Galen as *ψεφαρά*. U.

λάβρος, ον 'furious, boisterous'. Hom. (*Il.* 2. 148+)+. ET.: *λαβεῖν* (aor. inf.), *λάζομαι* 'take' are usually compared. Lat. *rabiēs* 'madness, frenzy' has also been suggested, with dissimilation of the initial consonant in Greek: see Frisk (1960–72: ii. 66–7). R.

λίβρος/λιβρός, ᾱ́, όν 'dark, black; dewy'. *Tragica adespota* (in Photius *λ* 295 Theodoridis = Photius 222. 25 Porson; cf. *Tragica adespota* fr. 232 K–S (from Hesychius *λ* 943 Latte))+. ET.: Probably root of *λείβω*

'pour'. ACCENT: At Photius λ 295 Theodoridis, Theodoridis reports that MS 'g' has λιβρον, unaccented (so also Porson's apparatus ad loc.) while 'z' has λίβρον. Theodoridis prints Porson's λιβρόν. Final accentuation is often printed elsewhere (e.g. *EM* 564. 49; *Greek Anthology* 15. 25. 1). Lentz (1867–70: i. 203. 1) includes λιβρός for Herodian but only, as he says, 'exempli causa'. U.

λυγρός, **ᾱ́**, **όν** 'baneful, mournful'. Hom. (*Il.* 2. 873+)+. ET.: λευγαλέος 'in sad or sorry plight, wretched'. Cf. ἐρευθαλέος 'ruddy' beside ἐρυθρός 'red' and ἔρευθος, τό 'redness'. *λεῦγος, τό is not attested but may have existed. Cf. also Lat. *lūgeō* 'mourn', *lūgubris* 'indicative of mourning or sorrow'. See Frisk (1960–72: ii. 108). ACCENT: Arc. 84. 9. F.

στενυγρός, **ή**, **όν** 'narrow'. Semonides (in Galen 17(1). 897. 8 ≈ Semonides in Galen 18(1). 411. 15 = Semonides fr. 14. 3 West)+. ET.: Root of στενός 'narrow', with velar element and -ρο- suffix: see Chantraine (1933: 225). F.

ἁδρός, **ᾰ́**, **όν** 'thick, stout'. Herodotus (1. 17. 1+)+. ET.: Root ἄδ- of ἄδην 'to one's fill', adverbial acc. of *ἄδη 'satiety'. ACCENT: Eust. 1447. 59. F.

φαιδρός, **ᾰ́**, **όν** 'bright, beaming'. Pindar (in Polybius 4. 31. 6 = Pindar fr. 109. 2 S–M)+. ET.: Root of φαίδιμος, (α), ον, 'shining'. ACCENT: Arc. 84. 13. F.

κῡδρός, **ᾰ́**, **όν** 'glorious, renowned'. Hom. (*Il.* 18. 184+)+. ET.: κῦδος, τό 'glory, renown'. ACCENT: Arc. 84. 13–14. F.

ψυδρός, **ᾰ́**, **όν** 'lying, untrue'. Theognis (122)+. ET.: Root of ψευδής 'lying, false'. F.

βλαβερός, **ᾰ́**, **όν** 'harmful'. Hesiod (*Op.* 365)+. ET.: βλάβη 'harm'. ACCENT: Hrd. διχρ. 15. 13. F.

φοβερός, **ᾰ́**, **όν** 'fearful'. Aeschylus (*Supp.* 891+)+. ET.: φόβος, ὁ 'panic flight, panic fear'. ACCENT: Arc. 108. 21–2 and *Ep. Ps.* 97. 12 prescribe the same accent for f. φοβερᾰ́ as for m. φοβερός, but without specifying the position of the accent. However, a non-recessive accent is implied since unlike φοβερός, recessive βαρύτερος (with f. βαρυτέρᾱ) receives a special comment in Arcadius, and recessive δίκαιος (with f. δικαίᾱ) a similar comment in *Ep. Ps.*, owing to the different locations of the recessive accent in m. and f. F.

γλαγερός, **ᾰ́**, **όν** 'full of milk'. *Greek Anthology* (6. 154. 8)+. ET.: γάλα, gen. γάλακτος 'milk'. F.

παγερός, **ᾰ́**, **όν** 'frosty, cold'. Dio Chrysostom (30. 11 (2. 297. 23 von Arnim))+. ET.: πάγος, ὁ 'frost'. F.

φλογερός, **ᾰ́**, **όν** 'blazing, flaming'. Euripides (*El.* 991+)+. ET.: φλόξ, gen. φλογός 'flame'. F.

μογερός, (**ᾰ́**), **όν** 'toiling; toilsome'. Aeschylus (*Th.* 827+)+. ET.: μόγος, ὁ 'toil'. F.

ψογερός, ά, όν 'fond of blaming'. Pindar (*P.* 2. 55)+. ET.: ψόγος, ὁ 'blameable fault; blame'. ACCENT: Arc. 81. 10. F.

στυγερός, ά, όν 'hated, abominated, loathed, hateful'. Hom. (*Il.* 2. 385+) +. ET.: στυγέω 'hate'; στύγος, τό 'hatred'. ACCENT: στυγὲρος at *Il.* 5. 47 on *P. Oxy.* ii. 223, col. 2 (3rd cent. AD). F.

σταθερός, ά, όν 'standing fast'. Aeschylus (in *Suda* σ 982 ≈ Photius 534. 2 Porson = Aeschylus fr. 276 Radt)+. ET.: Root of στάθμη 'carpenter's line'. ACCENT: Lentz (1867–70: i. 196. 16) takes Theognost. 70. 33–4 as evidence for final accentuation. Theognostus' list explicitly includes both ὀξύτονα and βαρύτονα, but the ὀξύτονα appear to come first; σταθερός would be the last word in this first part of the list. F.

ἱερός, ά, όν (with dialectal variants, essentially **ἴαρός** and **ἶρός**: see García-Ramón 1992: 183) 'filled with or manifesting divine power'. Hom. (*Il.* 1. 99+)+. ET.: The word corresponds to Skt *iṣirá-* 'powerful, swift', which is a derivative on the root *iṣ-* of *iṣṇā́ti*, *iṣyati* 'set in motion, hasten' and *eṣati* 'glide'. García-Ramón (1992: 203) concludes that there may have been two adjectives formed on the root or roots **H*$_1$*eiṣ-* and/or **H*$_1$*eiṣH*$_1$*-* in IE, one in **-ro-* and one in **-r-o-* (the latter derived either from an **r*/*n*-stem or from a 'locative' in *-er*). Alternatively, there was only one adjective in IE, in which case it was the one in **-ro-*. In either case, the Gk form would derive wholly or in part from an IE adjective in **-ro-*. Cf. App. 1.2 s.v. ἱερόν/ἶρόν, τό 'offering; temple'. ACCENT: Arc. 78. 10; Sch. *Il.* 9. 150a[1] (A); Hrd. *Part.* 179. 13; Theognost. 69. 33 (as common noun); implied by Eust. 743. 20. F.

διερός, ά, όν 'active, alive' (later 'wet, liquid'). Hom. (*Od.* 6. 201+)+. ET.: διαίνω 'wet, moisten'. Some have connected διερός 'active, alive' to δέος 'fear', δείδω 'be alarmed' (root *δϝι-), separating διερός 'wet, liquid': rejected by Chantraine (1968–80: 281); cf. Frisk (1960–72: i. 390). F.

σκιερός (and **σκιαρός**), ά, όν 'shady, giving shade'. Hom. (*Il.* 11. 480+)+. ET.: σκιόεις 'shady, shadowy'. F.

πλακερός (*v.l.* **πλοκερός**), ά, όν 'broad'. Theocritus (7. 18). ET.: πλάξ, gen. πλακός 'anything flat and broad; flat land'. F.

νοσακερός, ά, όν 'liable to sickness, sickly'. Aristotle (*Pol.* 1279[a]15–16+) +. ET.: Derivative of νόσος, ἡ 'sickness', with an unusual velar element. Cf. διψακερός 'thirsty'. F.

τακερός (and **τακηρός**), ά, όν 'melting in the mouth, tender'. Pherecrates (in Athenaeus 9. 366d = Pherecrates fr. 89 K–A)+. ET.: τήκω 'melt'. F.

γλυκερός, ά, όν 'sweet to the taste or smell'. Hom. (*Il.* 10. 4+)+. ET.: γλυκόεις 'sweet', γλυκύς 'sweet'. ACCENT: Arc. 115. 9–10. F.

θαλερός, ά, όν 'stout, sturdy, buxom'. Hom. (*Il.* 2. 266+)+. ET.: θάλλω <* θάλ-ι̯ω 'sprout, grow, thrive', θάλος, τό 'scion; child'. F.

μαλερός (and **σμαλερός**), ᾱ́, **όν** 'fierce, raging'. Hom. (*Il.* 9. 242+)+. ET.: Perhaps connected to *μάλα* 'very', *μᾶλλον* 'more', *μάλιστα* 'most of all'. F.

σφαλερός, ᾱ́, **όν** 'likely to make one stumble or trip'. Aeschylus (*Eu.* 375)+. ET.: *σφάλλω* 'make to fall'. ACCENT: Lentz (1867–70: i. 196. 15) takes Theognost. 70. 33 as evidence for final accentuation. Theognostus' list includes both *ὀξύτονα* and *βαρύτονα*, but the *ὀξύτονα* appear to come first; *σφαλερός* is in this first part of the list. F.

δολερός, ᾱ́, **όν** 'deceitful'. Sophocles (*El.* 124+)+. ET.: *δόλος*, *ὁ* 'bait, trick'. ACCENT: Lentz (1867–70: i. 196. 15) takes Theognost. 70. 33 as evidence for final accentuation. Theognostus' list explicitly includes both *ὀξύτονα* and *βαρύτονα*, but the *ὀξύτονα* appear to come first; *δολερός* is in this first part of the list. F.

θολερός, ᾱ́, **όν** 'muddy, foul, turbid'. Herodotus (4. 53. 2+)+. ET.: *θολός*, *ὁ* 'mud, dirt'. F.

χείμερος, **ον** 'wintry, stormy'. Aratus (797+). ET.: *χεῖμα*, *τό* 'winter weather, cold'. According to Frisk (1960–72: ii. 1080), extracted from compounds such as *δυσχείμερος* 'wintry, stormy'. R.

τρομερός, ᾱ́, **όν** 'trembling'. Euripides (*HF* 231+)+. ET.: *τρόμος*, *ὁ* 'trembling'. F.

φανερός, (ᾱ́), **όν** 'visible, manifest'. Pindar (*O.* 6. 73+)+. ET.: Root of *φαίνω* <* *φάν-ι̯ω* 'cause to appear'. ACCENT: Hrd. *διχρ.* 15. 13–14. F.

πλεννερός, ᾱ́, *όν* 'like mucus'. Hippocrates (in Galen 19. 131. 7). ET.: *πλέννaι· μύξαι* ('mucus'; Hesychius *π* 2525 Schmidt). F.

φθονερός, ᾱ́, **όν** 'envious, jealous'. Theognis (770)+. ET.: *φθόνος*, *ὁ* 'envy'. F.

γοερός (and **γοηρός**), ᾱ́, **όν** 'mournful'. Aeschylus (*A.* 1176)+. ET.: *γόος*, *ὁ* 'weeping'. ACCENT: Arc. 81. 9. F.

νοερός, ᾱ́, **όν** 'intellectual'. Aristotle (*Pr.* 954[a]35+)+. ET.: *νόος*, *ὁ* 'mind'. ACCENT: Arc. 81. 10. F.

νοσερός (and **νοσηρός**), ᾱ́, **όν** 'diseased'. Euripides (*Hipp.* 131+)+. ET.: *νόσος*, *ἡ* 'sickness'. ACCENT: Lentz (1867–70: i. 196. 16) takes Theognost. 70. 33 as evidence for final accentuation. Theognostus' list explicitly includes both *ὀξύτονα* and *βαρύτονα*, but the *ὀξύτονα* appear to come first; *νοσερός* is in this first part of the list. Final accentuation is given for the form *νοσηρός* by Ammonius (Ammonius 405 = Trypho fr. 15 Velsen); the word may or may not derive from Trypho, whom Ammonius is quoting or paraphrasing here. F.

δροσερός, ᾱ́, **όν** 'dewy, watery'. Euripides (*Ba.* 865+)+. ET.: *δρόσος*, *ἡ* 'dew'. ACCENT: Arc. 81. 10. F.

κρατερός (and **καρτερός**), ᾱ́, **όν** 'strong, stout, mighty'. Hom. (*Il.* 1. 25+)+. ET.: *κρατέω* 'be strong', *κρατύς* 'strong', *κάρτος*/*κράτος*, *τό* 'strength, might'. ACCENT: Arc. 80. 20–1; Sch. *Il.* 1. 280b (A). Further grammatical sources cited by Erbse on Sch. *Il.* 1. 280b. F.

νύκτερος, **ον** 'nightly'. Aeschylus (*Pr.* 797+)+. ET.: *νύξ*, gen. *νυκτός* 'night'. R.

νοτερός, **ά**, **όν** 'damp, moist'. Thucydides (3. 21. 4)+. ET.: *νότος*, *ὁ* 'south wind'. F.

κρυερός, **ά**, **όν** 'icy, cold, chilling'. Hom. (*Il.* 13. 48+)+. ET.: *κρυόεις* 'chilling', *κρύος*, *τό* 'icy cold, frost'. F.

τραφερός, **ά**, **όν** 'well-fed, fat' (in Homer *τραφερή* (sc. *γῆ*) = 'dry land'). Hom. (*Il.* 14. 308+)+. ET.: *τρέφω* 'nourish'; *ταρφύς* 'thick, close'; *τάρφος*, *τό* 'thicket'. F.

ζοφερός, **ά**, **όν** 'dusky, gloomy'. Hesiod (*Th.* 814)+. ET.: *ζόφος*, *ὁ* 'nether darkness'. F.

δνοφερός, **ά**, **όν** 'dark, murky'. Hom. (*Il.* 9. 15+)+. ET.: *δνόφος*, *ὁ* 'darkness'. F.

τρυφερός, **ά**, **όν** 'delicate, dainty'. Aristophanes (*V.* 1169+)+. ET.: *τρυφή*, *ἡ* 'softness, delicacy'. ACCENT: Arc. 81. 10. F.

τροχερός, **ά**, **όν** 'running, tripping'. Aristotle (*Rh.* 1409[a]1)+. ET.: Derived from *τροχός*, *ὁ* 'wheel' or *τρόχος*, *ὁ* 'running, course', nominal forms on the root of *τρέχω* 'run'. F.

πνῑγηρός, **ά**, **όν** 'choking, stifling'. Aristophanes (*Ra.* 122)+. ET.: *πνίζω* 'choke'. ACCENT: Hrd. *διχρ.* 15. 17. F.

σῑγηρός, **ά**, **όν** 'silent'. Menander (*Mon.* 240)+. ET.: *σῑγή*, *ἡ* 'silence'. F.

ἀλγηρός, **ά**, **όν** 'painful'. Septuagint (Je. 10. 19+)+. ET.: *ἄλγος*, *τό* 'pain'. ACCENT: Hrd. *διχρ.* 15. 17. F.

δηρός, **ά**, **όν** 'long, too long'. Hom. (*Il.* 14. 206+)+. ET.: *δήν* (adv.) 'for a long while' < **δϝᾱ-*. Cf. Skt *dūrá-* 'far', with different vocalism. ACCENT: *δὴρον* at *Il.* 5. 120 on *P. Oxy.* ii. 223, col. 5 (3rd cent. AD). F.

γεηρός, **όν** 'of earth, earthy'. Plato (*R.* 10. 612a)+. ET.: *γέη* = *γῆ* 'earth'. ACCENT: Hrd. *Part.* 179. 9. F.

ἀνθηρός, **ά**, **όν** 'flowery, blooming'. Sophocles (*Ant.* 960)+. ET.: *ἄνθη* 'full bloom'. ACCENT: Hrd. *διχρ.* 15. 17. F.

πενθηρός, **ά**, **όν** 'of or for mourning'. Anaxilas (in Hrd. *διχρ.* 15. 24 = Anaxilas fr. 36 K–A)+. ET.: *πένθος*, *τό* 'grief'. ACCENT: Hrd. *διχρ.* 15. 22. F.

ὀλισθηρός, **ά**, **όν** 'slippery'. Pindar (*P.* 2. 96)+. ET.: Root of *ὀλισθάνω*, aor. *ὤλισθον* 'slip'. ACCENT: Arc. 81. 17; Theognost. 71. 10; Ammonius 405 (= Trypho fr. 15 Velsen; the word perhaps comes from Trypho). F.

ὀχθηρός, **ά**, **όν** 'hilly'. Euphorion (in *EM* 228. 21 = Euphorion fr. 120 Powell)+. ET.: *ὄχθη* 'height or rising ground'. F.

μοχθηρός, **ά**, **όν** (Attic **μόχθηρος**: see below) 'suffering hardship; knavish'. Aeschylus (*Th.* 257+)+. ET.: *μόχθος*, *ὁ* 'toil, hardship'. ACCENT: Eust. (341. 16–20) and Arc. (81. 17–20) suggest that recessive accentuation is found only in Attic, and they and Ammonius (405) also report a tradition that in Attic different meanings are associated

with different accentuations. Trypho (in Ammonius 405 = Trypho fr. 15 Velsen) disagrees vigorously with this tradition and claims that the Athenians give the word a recessive accent not to distinguish meanings but because they liked recessive accents. Theognost. (71. 10) and *Ep. Hom. alph.* (ο 89) simply include the word in a list of finally accented words. According to Göttling (1835: 304–5), the manuscripts of Aristophanes regularly have recessive accentuation for the vocative *μόχθηρε* 'wretched' but final accentuation for the other cases. I have checked this assertion for codex Ravennas 137, 4, A by consulting the facsimile edition and found the convention to be followed almost consistently. Cf. Ch. 12 n. 13. F (but Attic R).

ἐλαιηρός, ***ά***, ***όν*** 'of or for oil'. Hippocrates (*Morb.* 2. 66 (vii. 100. 18 Littré)+)+. ET.: *ἔλαιον* 'olive-oil'. F.

ὑγιηρός, ***ά***, ***όν*** 'wholesome'. Pindar (*N.* 3. 18)+. ET.: *ὑγιής* 'healthy'. F.

ποιηρός, ***ά***, ***όν*** 'grassy'. Euripides (*Cyc.* 45+)+. ET.: *ποίη* 'grass'. ACCENT: Hrd. *διχρ.* 15. 17 (with Lentz's note on the text). F.

ἀνθρακηρός, ***ά***, ***όν*** 'belonging to charcoal'. Alexis (in Pollux 10. 111 = Alexis fr. 211.3 K–A). ET.: *ἄνθραξ*, gen. *-ακος* 'charcoal'. F.

ὀστρακηρός, ***ά***, ***όν*** 'of the nature of earthenware'. Aristotle (*PA* 679^{b}12+) +. ET.: *ὄστρακον* 'sherd'. F.

ὀγκηρός, ***ά***, ***όν*** 'bulky, swollen'. Hippocrates (*Fract.* 30 (iii. 518. 17 Littré)+)+. ET.: *ὄγκος*, *ὁ* 'bulk, size, mass'. F.

γυναικηρός, ***ά***, ***όν*** 'of or belonging to women, feminine'. Diocles (in Antiatt. 87. 2 = Diocles fr. 4 K–A; possibly corrupt); Phryn. (*PS* 55. 16). ET.: *γυνή*, gen. *γυναικός* 'woman'. F.

κροκηρός, ***ά***, ***όν*** 'made with saffron'. Galen (13. 182. 9)+. ET.: *κρόκος*, *ὁ*(/*ἡ*) 'saffron'. F.

λῆρος 'silly'. Lucian (*Gall.* 6+)+. ET.: Likely to be a derivative on the root of Lith. *lóti* 'shout', Arm. *lam* 'whine', Lat. *lāmentum* 'lament', etc.; see Frisk (1960–72: ii. 118). Used earlier as a noun 'trash, trumpery' (see App. 1.2 s.v. *λῆρος*, *ὁ*). The use in *λῆρον ... ποιητήν* 'silly poet' (Lucian, *Gall.* 6) may be appositional, at least in origin. ACCENT: Arc. 78. 6 (primarily intending the noun, although the epithet *μονογενές* 'of one gender' is probably applicable both to noun and adjective, the latter only being attested in the masculine). R.

σκληρός, ***ά***, ***όν*** 'hard'. Hesiod (*Th.* 839 (n. sg. as adv.))+. ET.: Related to *σκέλλομαι* 'be parched'. ACCENT: Arc. 78. 5–6. F.

ὀχληρός, ***ά***, ***όν*** 'troublesome, irksome'. Euripides (*Hel.* 452+)+. ET.: *ὄχλος*, *ὁ* 'crowd, throng'. F.

αἱμηρός, ***ά***, ***όν*** 'bloodstained'. Philodemus (*De Ira* fr. 6. 15)+. ET.: *αἷμα*, gen. *-ατος* 'blood'. ACCENT: The word is unaccented in the Philodemus papyrus but is also used e.g. by Andromachus in Galen 14. 33. 6; finally accented in printed editions. F.

λιμηρός, ά, όν 'furnished with a good harbour'. Apollodorus (in Strabo 8. 6. 1); in Thucydides (4. 56. 2+) as epithet of Laconian Epidaurus. ET.: λιμήν, gen. -ένος 'harbour'. F.

λῑμηρός, ά, όν 'hungry, causing hunger'. Theocritus (10. 57)+. ET.: λῑμός, ὁ(/ἡ) 'hunger'. F.

τολμηρός, ά, όν 'audacious'. Euripides (*Supp.* 305+)+. ET.: τόλμη 'courage'. ACCENT: Hrd. διχρ. 15. 17–18; Ammonius 405 (= Trypho fr. 15 Velsen; the word perhaps comes from Trypho). F.

ὀσμηρός, ά, όν 'smelling, odorous'. Nicander (in Athenaeus 15. 684b = Nicander fr. 74. 57 G–S). ET.: ὀσμή 'smell, odour'. F.

αὐχμηρός, ά, όν 'dry, without rain'. Sophocles (in Pollux 10. 55 = Sophocles fr. 475. 2 Radt+)+. ET.: αὐχμός, ὁ 'drought'. ACCENT: e.g. αὐχμηρὸν at Euripides, *Or.* 387 in codex Parisinus Graecus 2713. F.

βαλανηρός, ά, όν 'of the acorn type'. Theophrastus (*HP* 1. 11. 3). ET.: βάλανος, ἡ 'acorn'. F.

δαπανηρός, ά, όν 'lavish, extravagant'. Xenophon (*Mem.* 2. 6. 2)+. ET.: δαπάνη 'cost'. F.

λαχανηρός, ά, όν 'of vegetable kind'. Theophrastus (*HP* 7. 1. 1+). ET.: λάχανον 'garden herb'. F.

οἰνηρός, ά, όν 'of or belonging to wine'. Anacreon (in Pollux 6. 23 = Anacreon fr. 109 Page)+. ET.: οἶνος, ὁ 'wine'. F.

δακνηρός, ά, όν 'biting'. Philodemus (*De ira* col. 37. 19; unaccented on papyrus); Stobaeus (1. 49. 44). ET.: δάκνω 'bite'. F.

ὀκνηρός, ά, όν 'shrinking, timid'. Hippocrates (*Acut.* 28 (ii. 284. 3 Littré))+; comparative in Pindar (*N.* 11. 22). ET.: ὄκνος, ὁ 'shrinking, hesitation'. F.

πονηρός, ά, όν (Attic **πόνηρος**: see below) 'oppressed by toils; worthless'. Aeschylus (*Ch.* 1045)+; superlative in Hesiod (frr. 248, 249 M–W = Hesiod in *CAG*: xx. 155. 7, 8). ET.: πόνος, ὁ 'work, toil'. ACCENT: Eust. (341. 16–20) and Arc. (81. 17–20) suggest, as for μοχθηρός/μόχθηρος (q.v.), that recessive accentuation is found only in Attic. They and Ammonius (405) also report a tradition that the Athenians used different accentuations for different meanings; *Ep. Hom. alph.* ο 89 simply states that the word is accented differently in different meanings. Trypho (in Ammonius 405 = Trypho fr. 15 Velsen) disagrees: see above s.v. μοχθηρός. Theognost. (71. 11) simply includes πονηρός in a list of finally accented words. According to Göttling (1835: 304–5), the same distribution of accentuations is found in the manuscripts of Aristophanes as for μόχθηρος: vocative recessive and other cases finally accented. Again, the convention is followed almost consistently in codex Ravennas 137, 4, A, which I have been able to consult in facsimile. Cf. Ch. 12 n. 13. F (but Attic R).

ὑπνηρός, ᾱ́, **όν** 'drowsy'. Hippocrates (*Aër.* 24 (ii. 92. 1 Littré)). ET.: ὕπνος, ὁ 'sleep'. F.

ἐτνηρός, ή, **όν** 'like soup'. Phaenias (in Athenaeus 9. 406c). ET.: ἔτνος, τό 'thick soup'. F.

ὀδυνηρός, ᾱ́, **όν** 'painful'. Mimnermus (in Stobaeus 4. 20. 16 = Mimnermus fr. 1. 5 West+)+. ET.: ὀδύνη 'pain of body'. ACCENT: Hrd. *Part.* 179. 10. F.

ὀξηρός, ᾱ́, **όν** 'of or for vinegar'. Sophocles (in *Append. prov.* 4. 27 = Sophocles fr. 306 Radt)+. ET.: ὄξος, τό 'vinegar'. F.

λαμπηρός, ᾱ́, **όν** 'foamy'. Hippocrates (in Galen 19. 117. 11). ET.: λάμπη 'scum'. ACCENT: Final accentuation is prescribed for a word λαπηρός by Arc. 81. 16. Schmidt in his apparatus ad loc. equates this with Hippocrates' λαμπηρός. F.

λῡπηρός, ᾱ́, **όν** 'painful, distressing'. Sophocles (*El.* 553+)+. ET.: λύπη 'pain'. ACCENT: Lentz (1867–70: i. 197. 13) includes the word in his reconstruction of Herodian, but his evidence is obscure to me. F.

οἰσυπηρός, ᾱ́, **όν** 'with the grease in it'. Aristophanes (*Ach.* 1177)+. ET.: οἰσύπη 'the grease extracted from sheep's wool'. F.

σιωπηρός, ᾱ́, **όν** 'silent'. *Greek Anthology* (7. 199. 4+); comparative in Xenophon (*Smp.* 1. 9). ET.: σιωπή 'silence'. F.

ὀμβρηρός, ᾱ́, **όν** 'rainy'. Hesiod (*Op.* 451)+. ET.: ὄμβρος, ὁ 'storm of rain'. F.

ὑδρηρός, ᾱ́, **όν** 'of or for water'. Diog. Sinop. (in Stobaeus 4. 33. 17 = Diog. Sinop. fr. 7. 6 S–K); possibly to be read at Aeschylus fr. 96. 2 Radt (see Radt ad loc.); unaccented on 1st-cent. AD papyrus of Sophron *PSI* xi. 1214d 12 (= Sophron fr. 4. 46 K–A). ET.: ὕδωρ, gen. ὕδατος 'water'. F.

ὀτρηρός, ᾱ́, **όν** 'quick, nimble, busy'. Hom. (*Il.* 1. 321+)+. ET.: ὀτρύνω 'stir up, rouse', ὀτραλέως 'quick, nimble'. ACCENT: *Ep. Hom. alph.* ο 89. F.

μυρηρός (or **μυραρός**), ᾱ́, **όν** 'of sweet oil'. Aeschylus (in Athenaeus 1. 17d = Aeschylus fr. 180. 5 Radt)+. ET.: μύρον 'sweet oil'. F.

ἄσηρος/**ἀσηρός** (or **ἀσᾱρός**), **όν** 'causing discomfort; feeling disgust'. Sappho (at *P. Oxy.* xxi. 2294. 11 = Sappho 103. 8 V.; unaccented on the papyrus); Hippocrates (*Fract.* 22 (iii. 490. 9 Littré)+)+. ET.: ἄση 'surfeit, loathing, nausea'. ACCENT: Theognost. 71. 17 clearly assumes recessive accentuation. Lentz (1867–70: i. 197. 17) wrongly adduces Theognostus as evidence for final accentuation in Herodian. Printed texts, however, give the word final accentuation. U.

κνῖσηρός, ᾱ́, **όν** 'full of the steam of burnt sacrifice'. Achaeus (in Athenaeus 9. 368a = Achaeus fr. 7. 2 S–K). ET.: κνῖσα, ή 'steam and odour of fat which exhales from roasting meat'. F.

πισσηρός, ᾱ́, **όν** 'of pitch'. Hippocrates (*Fract.* 24 (iii. 502. 3 Littré)+)+. ET.: πίσσα, ή 'pitch'. F.

ἄτηρός, **ᾱ́**, **όν** 'blinded by ἄτη'. Theognis (433+)+. ET.: ἄτη 'bewilderment, infatuation caused by delusion sent by the gods'. ACCENT: Hrd. διχρ. 15. 17; Hrd. *Part*. 179. 9; *Ep. Hom. alph. ο* 89. F.

καματηρός, **ᾱ́**, **όν** 'toilsome, wearisome'. *Homeric Hymns* (5. 246)+. ET.: κάματος, ὁ 'toil'. ACCENT: Theognost. 71. 10; Hrd. *Part*. 179. 9; Ammonius 405 (= Trypho fr. 15 Velsen; the word perhaps comes from Trypho). F.

αἱματηρός, (**ᾱ́**), **όν** 'bloodstained'. Aeschylus (*A*. 815+)+. ET.: αἷμα, gen. -ατος 'blood'. ACCENT: Theognost. 71. 11; *Ep. Hom. alph. ο* 89. F.

δειματηρός, **ᾱ́**, **όν** 'fearful, timid'. Apollonius Dyscolus (*Synt*. 260. 9). ET.: δεῖμα, gen. -ατος 'fear'. F.

καυματηρός, **ᾱ́**, **όν** 'very hot'. Strabo (15. 3. 1+). ET.: καῦμα, gen. -ατος 'burning heat'. F.

μελιτηρός, **ᾱ́**, **όν** 'of or for honey'. Aristophanes (in Pollux 10. 93 = Aristophanes fr. 525 K–A; on the text, and for other attestations of μελιτηρός, see Kassel and Austin ad loc.)+. ET.: μέλι, gen. μέλιτος 'honey'. ACCENT: Ammonius 405 (= Trypho fr. 15 Velsen; the word perhaps comes from Trypho). F.

σῑτηρός, **ᾱ́**, **όν** 'of corn'. Hippocrates (*Acut*. 10 (ii. 244. 7–8 Littré))+. ET.: σῖτος, ὁ 'grain'. F.

ἀλφιτηρός, **ᾱ́**, **όν** 'of or belonging to groats'. Antiphanes (in Pollux 10. 179 = Antiphanes fr. 64 K–A, with variant reading ἀλφιτήριον accepted by Dindorf and Bethe but not by Kassel and Austin. The word ἀλφιτηρός is clearly attested at Herodas 7. 73, though there without accent). ET.: ἄλφιτον 'groats', ἄλφι 'groats'. F.

πλακουντηρός, **ᾱ́**, **όν** 'like a cake'. Chrysippus Tyaneus (in Athenaeus 14. 647d). ET.: πλακοῦς, gen. -οῦντος 'flat cake'. F.

ἀταρτηρός, **όν** 'mischievous, baneful'. Hom. (*Il*. 1. 223+)+. ET.: Looks like a derivative of the verb ἀταρτᾶται· βλάπτει. πονεῖ. λυπεῖ ('harms, hurts, grieves'; Hesychius α 8021 Latte), although the verb is only attested in Hesychius and could be back-formed from the adjective. ACCENT: Arc. 81. 16–17. F.

αὐστηρός, **ᾱ́**, **όν** 'harsh, rough, bitter'. Hippocrates (*Fract*. 29 (iii. 514. 12 Littré)+)+. ET.: Related to αὖος 'dry'. Apparently a derivative of a derived nominal form in *-*t*-, e.g. *αὖστος, τό (Schwyzer 1953: 482 n. 14; Frisk 1960–72: i. 189) or *αὐστός (Chantraine 1968–80: 141). ACCENT: Hrd. *Part*. 179. 9. F.

πλουτηρός, **ᾱ́**, **όν** 'enriching'. Xenophon (*Oec*. 2. 10). ET.: πλοῦτος, ὁ 'wealth'. F.

αὐηρός, **ᾱ́**, **όν** 'dry, parched'. Rhianus (*Greek Anthology* 12. 121. 6 = Rhianus 72. 6 Powell). ET.: αὖος 'dry'. ACCENT: αὐηρὴν at *Greek Anthology* 12. 121. 6 in codex Palatinus 23. F.

ἰχθυηρός, **ᾱ́**, **όν** 'fishy, scaly'. Aristophanes (*Pl*. 814+)+. ET.: ἰχθύς, gen. -ύος 'fish'. F.

καρυηρός, ᾱ́, **όν** 'nutlike'. Theophrastus (*HP* 1. 11. 3+). ET.: *κάρυον* 'nut'. F.

βοτρυηρός, ᾱ́, **όν** 'of the grape kind'. Theophrastus (*HP* 1. 11. 5). ET.: *βότρυς*, gen. *-υος* 'bunch of grapes'. F.

σταχυηρός, ᾱ́, **όν** 'enclosed in an ear of corn'. Theophrastus (*HP* 9. 16. 4). ET.: *στάχῡς*, gen. *-υος* 'ear of corn'. Cf. App. 1.2 s.v. *σταχυηρά, τά* 'plants that bear ears, cereals'. F.

καρφηρός (or **καρφῡρός**), ᾱ́, **όν** 'of dry straw'. Euripides (*Ion* 173). ET.: *κάρφος, τό* 'dry stalk'. F.

ταρῑχηρός, ᾱ́, **όν** 'of or for pickled food'. Sophocles (in Pollux 6. 65 = Athenaeus 2. 67c = Sophocles fr. 606 Radt)+. ET.: *τάρῑχος, ὁ/τό* 'meat preserved by pickling'. F.

τρῡχηρός, ᾱ́, **όν** 'ragged; wearing, tormenting'. Euripides (*Tr.* 496 (*bis*))+. ET.: *τρῦχος, τό* 'worn out, tattered garment'. F.

τυχηρός, ᾱ̆, **όν** 'lucky, fortunate'. Aeschylus (*A.* 464)+. ET.: *τύχη* 'fortune'. ACCENT: Arc. 81. 17. F.

αἰψηρός, ᾱ́, **όν** 'quick, speedy, sudden'. Hom. (*Il.* 19. 276+)+. ET.: *αἶψα* 'quickly'; see Risch (1974: 69). ACCENT: e.g. *αἰψηρήν* at *Il.* 19. 276 in codex Venetus Marc. 822 (15th-cent. replacement for lost part of the codex). F.

διψηρός, ᾱ́, **όν** 'thirsty'. Hippocrates (*Aër.* 7 (ii. 28. 1 Littré))+. ET.: *δίψα, ἡ* 'thirst'. F.

ἐρυθρός, ᾰ́, **όν** 'red'. Hom. (*Il.* 9. 365+)+. ET.: *ἐρεύθω* 'make red'; Skt *rudhirá-* 'red'. ACCENT: Arc. 85. 14. F.

ἐχθρός, ᾰ́, **όν** 'hated, hateful, hating'. Hom. (*Il.* 9. 378+)+. ET.: *ἔχθος, τό* 'hate'. Cf. App. 1.2 s.v. *ἐχθρός, ὁ* 'enemy'. ACCENT: Arc. 84. 18. F.

νωθρός, ᾰ́, **όν** 'sluggish, slothful'. Hippocrates (*Epid.* 4. 23 (v. 164. 3 Littré)+)+. ET.: Root of *νωθής* 'sluggish, slothful'. ACCENT: Arc. 84. 18. F.

δαῖρος/δαιρός 'capable of burning'. Herodian (in Arc. 79. 15–16). ET.: *δαίω* < * *δάϝ-ιω* 'kindle'. Pre-form apparently **δαϝ-ιρος*. ACCENT: Arc. (79. 15–16) and Theognost. (70. 20–1) report that there is hesitation about the accent. (On the text of the Theognostus passage, see Schmidt's apparatus to Arc. 79. 16.) U.

νειρός, ᾰ́, **όν** 'lowest'. Lycophron (*Al.* 896)+. ET.: Root of *νειόθεν* 'from the bottom'. F.

ἄκρος, ᾱ̆, **ον** 'at the furthest point'. Hom. (*Il.* 5. 336+)+. ET.: See App. 1.2 s.v. *ἄκρον, τό* 'highest or furthest point'. ACCENT: Arc. 84. 24. R.

μακρός, ᾰ́, **όν** 'long, tall, large'. Hom. (*Il.* 1. 402+)+. ET.: *μᾶκος* (Att.-Ion. *μῆκος*), *τό* 'length'. ACCENT: Arc. 84. 22. F.

νεκρός, ᾰ́, **όν** 'dead'. Pindar (in Zenobius 5. 59 = Pindar fr. 203. 2 S–M) +. ET.: *νέκῡς/νέκυς* 'corpse'; Lat. *nex* 'death'. The form *νῶκαρ* 'lethargy, coma' (Nicander, *Ther.* 189; Hesychius *ν* 778 Latte) is attested too sparsely and too late to be a likely source of *νεκρός*: see Chantraine

(1968–80: 741; analogical explanation of *νῶκαρ*). Cf. App. 1.2 s.v. *νεκρός*, *ὁ* 'corpse'. ACCENT: Arc. 84. 5, 84. 22 (adj. and noun not distinguished). F.

μῑκρός (and ***σμῑκρός***), ***ᾱ́***, ***όν*** 'small, little'. Hom. (*Il.* 5. 801+)+. ET.: A stem (*σ*)*μῑκ-* or (*σ*)*μικ-* is attested in the gloss *μικύθινον· τὸ μικρόν· καὶ νήπιον* ('small; and childish'; Hesychius *μ* 1346 Latte) and in personal names, e.g. *Μίκκος*, f. *Μίκκα*; *Μίκυθος*; *Σμικυθίων*. But the comparative *μείων* 'smaller' (cf. Myc. *me-wi-jo*, *me-u-jo*) and superlative *μεῖστος* 'smallest' suggest that the *-k-*was not originally part of the root. The form (*σ*)*μῑκρός* is likely to have been influenced by *μακρός* 'large'. Szemerényi (1968: 32–3) proposes the following solution: the stem *μῑκ-* comes from **μῑκος*, an *-ικος* derivative of **miyo-*, formed on the root **mei-*/*mi-*. This was transformed to *μῑκρός* under the influence of *μακρός*. The *-ϝ-*/*-u-* of the Mycenaean forms would have an analogical origin. ACCENT: Arc. 84. 22. F.

πικρός, ***ᾱ́***, ***όν*** 'pointed, sharp, keen'. Hom. (*Il.* 4. 118+)+. ET.: *ποικίλος* 'many-coloured' is etymologically related. Root **pi̯ḱ-* attested e.g. in the Skt nasal-infix pres. *piṃśáti* 'cut, adorn', Lith. *piẽšti* 'draw'. The OCS adj. *pĭstrŭ* 'many-coloured' is an exact correspondent. See Frisk (1960–72: ii. 535, 572–3); Risch (1974: 68); Chantraine (1933: 224; 1968–80: 901). ACCENT: Arc. 84. 22. F.

θαλυκρός, ***ᾱ́***, ***όν*** 'hot, glowing'. Callimachus (?) (in e.g. *EM* 71. 30 = Callimachus fr. 736 Pf.). ET.: Cf. *θαλυσσόμενος· φλεγόμενος* 'blazing up' (Hesychius *θ* 67 Schmidt), from **tʰalúk-i̯omai* (and perhaps ultimately **dʰalkʷ-i̯omai*, but see Frisk (1960–72: i. 650)). F.

σαπρός, ***ᾱ́***, ***όν*** 'rotten'. Theognis (1362)+. ET.: *σήπω* 'make rotten'. ACCENT: Arc. 85. 3. F.

λεπρός, ***ᾱ́***, ***όν*** 'scaly, rough'. Hippocrates (*Liqu.* 4 (vi. 128. 3 Littré))+. ET.: *λέπος*, *τό* 'rind, husk, scale'. ACCENT: Arc. 85. 3. F.

λαμπρός, ***ᾱ́***, ***όν*** 'bright, radiant'. Hom. (*Il.* 1. 605+)+. ET.: *λάμπω* 'shine'. ACCENT: Arc. 85. 2. F.

λυπρός, ***ᾱ́***, ***όν*** 'distressful, wretched, poor, causing pain'. Hom. (*Od.* 13. 243)+. ET.: *λῡ́πη* 'pain', *λῡπέω* 'grieve, vex'. ACCENT: Arc. 85. 3. F.

ἀλῑτρός, ***όν*** 'sinful, wicked'. Hom. (*Il.* 8. 361+)+. ET.: *ἀλιταίνω*, aor. *ἤλιτον* 'sin or offend against'. But note *ἀλείτης* 'sinner', which seems to have the agentive suffix *-της* and may result from reanalysis of *ἀλῑτρός* as having the suffix *-τρο-*: see Chantraine (1968–80: 56–7). Frisk (1960–72: i. 67) suggests extension from a lost *r*/*n*-stem, but there is not enough evidence for an athematic noun. Cf. App. 1.2 s.v. *ἀλῑτρός*, *ὁ* 'sinner'. ACCENT: e.g. *ἀλιτρὸς* at *Il.* 8. 361 in codex Venetus Marc. 822. F.

οἰκτρός, ***ᾱ́***, ***όν*** 'pitiable'. Hom. (*Il.* 11. 242+)+. ET.: *οἶκτος*, *ὁ* 'pity, compassion'. ACCENT: Arc. 85. 7. F.

γαῦρος, **ον** 'exulting in'. Archilochus (in e.g. Dio Chrysostom 33. 17 (1. 302. 14 von Arnim) = Archilochus fr. 114. 2 West)+. ET.: Related to γάνυμαι 'brighten up, be glad', γαίω < *γάϝ-ιω 'rejoice' (root *gau-*, perhaps from **geH₂u-*); see Chantraine (1968–80: 213); Vine (2002: 339). ACCENT: Sch. Hsd. *Th.* 832 (implicit). See also below s.v. ἀγαυρός/ἄγαυρος 'proud, stately'. R.

ἀγαυρός/ἄγαυρος, **ον** 'proud, stately'. Hesiod (*Th.* 832)+. ET.: Related to γάνυμαι 'brighten up, be glad', γαίω < *γάϝ-ιω 'rejoice' (root γαυ-); see above s.v. γαῦρος 'exulting in'. ACCENT: Recessive accent prescribed by Sch. Hsd. *Th.* 832. Eust. 1444. 9 assumes final accentuation for ἀγαυρός, recessive for γαῦρος. The comment at Eust. 705. 64 is consistent with either final or recessive (but not intermediate) accentuation for ἀγαυρος, but the transmitted reading is ἄγαυρος. Cf. Sch. *Il.* 8. 178a (A). U.

παῦρος, **ον** 'little, small'. Hom. (*Il.* 2. 675+)+. ET.: Root of Lat. *pau-cus* 'few, little', Goth. *fav-ai* 'few': see Chantraine (1968–80: 865); Risch (1974: 70). R.

γῡρός, **ᾱ́**, **όν** 'rounded, curved, crooked'. Hom. (*Od.* 19. 246)+. ET.: Formed on the root **geu-*/**gu-* of γύαλον 'hollow', Avestan *gav-* 'hand': see Frisk (1960–72: i. 335–6, 330–1). Cf. App. 1.2 s.v. γῦρος, ὁ 'ring, circle'. ACCENT: Eust. 638. 59, 907. 5, 1864. 5. F.

φλεγυρός, **ᾱ́**, **όν** 'burning, inflamed'. Cratinus (in Athenaeus 8. 344e = Cratinus fr. 62. 2 K–A)+. ET.: φλέγω 'burn'. Leumann (1953: 223 n. 2) suggests a dissimilation from *φλεγυλός. F.

λιγυρός, **ᾱ́**, **όν** 'clear, shrill'. Hom. (*Il.* 5. 526+)+. ET.: λιγύς 'clear, shrill'. Schwyzer (1953: 258) and Leumann (1953: 223 n. 2) suggest a dissimilation from *λιγυλός. ACCENT: Arc. 82. 13–14. F.

ὀϊζῡ́ρός, **ᾱ́**, **όν** 'woeful, miserable'. Hom. (*Od.* 3. 95+)+. ET.: ὀϊζῡ́ς 'woe, misery', ὀϊζύω 'wail, mourn'. ACCENT: *An. Ox.* 2. 323. 24. F.

ψαθυρός, **όν** 'friable, crumbling'. Aristotle (*HA* 510^{b}26+)+. ET.: ψαθάλλω 'scratch, rub'. F.

βδελυρός, **ᾱ́**, **όν** (Attic **βδέλυρος**: see below) 'disgusting'. Aristophanes (*Nu.* 446+)+. ET.: One of a series of words of related senses built on a stem βδελυ-; cf. βδελύσσομαι 'feel a loathing for food; be sick'; see Frisk (1960–72: i. 229–30). Leumann (1953: 223 n. 2) suggests a dissimilation from *βδελυλός. ACCENT: Eust. 341. 14 says that the Ἀττικοί accent the word βδέλυρος and implies that in the Koine it is βδελυρός. F (but Attic R).

λαμυρός/λάμυρος, **ᾱ**, **ον** 'full of abysses; gluttonous'. Epicrates (in Athenaeus 6. 262d = Epicrates fr. 5. 8 K–A)+. ET.: Root of Λάμια, ἡ *fabulous monster said to feed on man's flesh*. ACCENT: Kassel and Austin print λαμυρόν at Epicrates fr. 5. 8 K–A, following Meineke, who emended the MS reading λάμυρον following Lobeck. Kaibel

prints *λάμυρον*. Both final and recessive accentuation are found in printed texts for other authors. U.

γλαμυρός, ***ᾱ́***, ***όν*** 'blear-eyed'. Sophocles (in e.g. Sch. vet. Ar. *Ra.* 588d = Sophocles fr. 396 Radt)+. ET.: Cf. *γλάμων* 'blear-eyed'. F.

ἁλμυρός, ***ᾱ́***, ***όν*** 'salt, briny'. Hom. (*Od.* 5. 100+)+. ET.: *ἅλμη* 'sea water'. ACCENT: Arc. 82. 14. F.

καπυρός, ***ᾱ́***, ***όν*** 'dried by the air'. Epicharmus (in Athenaeus 2. 52b = Epicharmus fr. 148 K–A)+. ET.: *καπύσσω* 'breathe forth'. Related to *καπνός*, *ὁ* 'smoke'. ACCENT: Arc. 82. 14. F.

λεπυρός, ***ᾱ́***, ***όν*** 'in a husk, peel, rind'. Nicander (*Ther.* 136+). ET.: *λέπος*, *τό* 'rind, husk, scale'. F.

ἀήσυρος, ***ον*** 'light as air'. Aeschylus (*Pr.* 452)+. ET.: Root of *ἄημι* 'blow', possibly with an original *t*-suffix: Frisk (1960–72: i. 26). But cf. Chantraine (1968–80: 26, s.v. *ἄημι*). ACCENT: e.g. *ἀήσυροι* at Aeschylus, *Pr.* 452 in codex Laurentianus 32. 9. R.

γλαφυρός, ***ᾱ́***, ***όν*** 'hollow, hollowed; polished; subtle, exact'. Hom. (*Il.* 2. 88+)+. ET.: *γλάφυ* 'hollow, hole, cavern' (*hapax* at Hesiod, *Op.* 533), verbal form *γλάφει* 'scrape up, dig up' (Hesiod, *Scutum* 431), aor. participle *διαγλάψασ'* 'having scooped out' (*Od.* 4. 438). Leumann (1953: 223 n. 2) suggests a dissimilation from **γλαφυλός*. ACCENT: Arc. 115. 15–17. Cf. Eust. 327. 35. F.

ἐχυρός, ***ᾱ́***, ***όν*** 'strong, secure'. Thucydides (4. 8. 6+)+. ET.: Doublet of *ὀχυρός* 'firm, lasting', with *e*-grade root that could be analogical on *ἔχω* 'hold'; see Chantraine (1968–80: 392). ACCENT: Arc. 82. 14. F.

ὀχυρός, ***ᾱ́***, ***όν*** 'firm, lasting'. Aeschylus (*A.* 44+)+; superlative in Hesiod (*Op.* 429). ET.: *o*-grade root of *ἔχω* 'have, hold'. ACCENT: Arc. 82. 14. F.

ἰσχῡρός, ***ᾱ́***, ***όν*** 'strong'. Alcaeus (in Athenaeus 14. 627b = Alcaeus fr. 140. 9 V.)+. ET.: *ἰσχύς*, gen. *-ύος* 'strength'. ACCENT: Hrd. *διχρ.* 15. 18. A non-recessive accent is implied by Arc. 108. 22 and *Ep. Ps.* 97. 12; the observation made on these passages s.v. *φοβερός* (q.v.) applies here too. F.

στιφρός, ***ᾱ́***, ***όν*** 'firm, solid'. Aristophanes (in Athenaeus 4. 133a = Aristophanes fr. 148. 3 K–A)+. ET.: *στῖφος*, *τό* 'body of men in close array'. ACCENT: Arc. 84. 19. F.

ἀβληχρός (and later ***βληχρός***), ***ᾱ́***, ***όν*** 'weak, feeble'. Hom. (*Il.* 5. 337+)+. ET.: Probably derived from *βλᾱ́ξ*, gen. *βλᾱκός* 'stolid, stupid', with Ionic vocalism and 'expressive' aspiration. The *ἀ-* is probably prothetic. Cf. Frisk (1960–72: i. 4, 244–5). ACCENT: Heracleides of Miletus regarded the initial *ἀ-* of the form *ἀβληχρός* as privative (misunderstanding the meaning of *βληχρός*) and prescribed recessive accentuation; the *παράδοσις* and those grammarians who thought the *ἀ-* was prothetic assigned final accentuation (Sch. *Il.* 8. 178a (A);

Eust. 705. 59–64; for further grammatical sources see Erbse on Sch. *Il.* 8. 178a). Hrd. *Part.* 179. 10 appears to include *ἀβληχρός* in a list of finally accented words, but the word does not fit the context. We may side with those grammarians who regarded the *ἀ-* as prothetic and the accent as final. The grammarians in any case agree on final accentuation for the form *βληχρός*. Cf. West's apparatus to *Il.* 5. 337. F.

μελιχρός, ᾱ́, ***όν*** 'honey-sweetened'. Teleclides (in Athenaeus 11. 485f = Teleclides fr. 27. 1 K–A)+. ET.: Derivative of *μέλι*, gen. *μέλιτος* 'honey', with an unusual velar element: Chantraine (1933: 225–6). ACCENT: Hrd. *Part.* 179. 12 (but the word does not fit the context). F.

πενιχρός, ᾱ́, ***όν*** 'poor, needy'. Hom. (*Od.* 3. 348)+. ET.: Root of *πένης* 'poor man', with an unusual velar element: Chantraine (1933: 225). ACCENT: Probably implied by Sch. *Il.* 8. 178a (A). F.

αἰσχρός, (ᾱ́), ***όν*** 'causing shame'. Hom. (*Il.* 2. 119+)+. ET.: *αἶσχος*, *τό* 'shame'. ACCENT: Arc. 84. 19. F.

βδελυχρός, ᾱ́, ***όν*** 'disgusting'. Epicharmus (in Athenaeus 7. 321d = Epicharmus fr. 56. 2 K–A). ET.: Like *βδελυρός* (q.v.), but with an additional velar element. F.

ψῡχρός, ᾱ́, ***όν*** 'cold'. Hom. (*Il.* 5. 75+)+. ET.: *ψῦχος*, *τό* 'cold', *ψύχω* 'breathe, blow, make cool'. ACCENT: Arc. 84. 18; probably implied by Sch. *Il.* 8. 178a (A). F.

χλωρός, ᾱ́, ***όν*** 'greenish yellow, pale green'. Hom. (*Il.* 7. 479+)+. ET.: Root **ĝhel-/*ĝhol-/*ĝhl-* of *χλόη* 'the first green shoot of plants' and *χολή* 'gall, bile'. The vocalism is unexplained; see Frisk (1960–72: ii. 1105–6); Chantraine (1968–80: 1265). ACCENT: Arc. 79. 11. F.

Examples of excluded words: *κλαμαρός* (only as a probable corruption of *κλαδαρός* at *Greek Anthology* 9. 322. 4, and at Hesychius *κ* 2859 Latte); *ὑγρός* (etymology uncertain); *ὀλερός* (perhaps a ghost word: see LSJ Revised Supplement, s.v.); *ἀκανθηρός* (only attested in the comparative); *πηρός* (Attic *πῆρος*) (etymology unclear); *κοπηρός* (first attested at Hrd. *Part.* 179. 9, probably not a genuine Herodianic treatise: no guarantee that the word falls within the date range here considered); *ὑδατηρός* (only exists as an uncertain reading at Aeschylus fr. 96. 2 Radt); *μελετηρός* (not attested in the positive until Philostratus); *αἰσχυντηρός* (only attested in the comparative); *καυστηρός* (ultimately based on *καυστήρ* 'cauterizing apparatus', with stem-final *-ρ*).

1.2 Nouns with Suffix *-ρο-*

The following abbreviations are used to encode information at the end of each entry: (*a*) F = finally accented; R = recessive; U = uncertain or variable accentuation, i.e. both final and recessive accentuation are

attested and no decision could be made between them. Where more than one accent is attested but some decision could be reached, this decision has been explained in the note and the word has been classified as either F or R. (*b*) FREQ.: the figure given after 'FREQ.' is the number of occurrences of the word in the Perseus Digital Library corpus (Crane 1999), which contained *c.*3,400,000 words at the time of use (January 1999). This number is used as a frequency index. (*c*) TH = attested in Thucydides.

κίσθαρος (or ***κίσσαρος***), ***ὁ*** 'rock-rose'. Dioscorides (1. 97. 1)+. ET.: *κίσθος*/*κισθός*, *ὁ* 'rock-rose'. R. FREQ.: 0.

τάλαρος, ***ὁ*** 'basket'. Hom. (*Od.* 4. 125+)+. ET.: Root of (aor.) *ἐτάλασσα* 'take upon oneself, bear, suffer'. Frisk (1960–72: ii. 848) assumes a substantivized adjective. ACCENT: Hrd. *μον.* 927. 11. R. FREQ.: 10.

γίγγλαρος, ***ὁ*** 'kind of flute or fife'. Pollux (4. 82). ET.: Derived from *γίγγρος*, *ὁ* or *γίγγρᾱς*, *ὁ* 'small Phoenician flute or fife', with dissimilation from **γίγγραρος*: Frisk (1960–72: i. 306). R. FREQ.: 0.

κύλλαρος (or ***σκύλλαρος***), ***ὁ*** 'hermit crab'. Aristotle (*HA* 530[a]12). ET.: *κυλλός* 'club-footed and bandy-legged'. ACCENT: Hrd. *μον.* 927. 11 (unless the proper name *Κύλλαρος* is meant: see Lentz ad loc.). R. FREQ.: 0.

χείμαρος, ***ὁ*** 'plug in a ship's bottom'. Hesiod (*Op.* 626). ET.: *χεῖμα*, gen. *-ατος* 'winter weather'. R. FREQ.: 1.

κόμαρος, ***ἡ*** 'strawberry-tree, arbutus'. Aristophanes (*Av.* 620)+. ET.: *κόμη* 'hair, foliage': Strömberg (1940: 58). ACCENT: Arc. 80. 7. R. FREQ.: 1.

οἴναρον, ***τό*** 'vine-leaf, tendril'. Xenophon (*Oec.* 19. 18)+. ET.: *οἴνη* 'vine'. ACCENT: *Ep. Hom. alph.* *μ* 64. R. FREQ.: 1.

κύσσαρος (or ***κύσαρος***), ***ὁ*** 'anus'. Hippocrates (*Nat. puer.* 17 (vii. 498. 14 Littré))+. ET.: *κυσός· ἡ πυγή* ('buttocks'; Hesychius *κ* 4738 Latte). R. FREQ.: 0.

ἕταρος, ***ὁ*** 'companion, comrade'. Hom. (*Il.* 5. 534+)+. ET.: Derivative in *-(α)-ρος* on the stem **set-* of OCS *po-sětiti* 'to visit': Frisk (1960–72: i. 579). ACCENT: *ετάροισι* at *Il.* 5. 165 on *P. Oxy.* ii. 223, col. 7 (3rd cent. AD) and at *Od.* 14. 269 in *P. Ryl.* i. 53, fol. 17[v] (3rd or 4th cent. AD); *ετάρου[ς* at *Od.* 24. 300 in *P. Ryl.* i. 53, fol. 97[v]. R. FREQ.: 176 (examples almost all Homeric).

κύτταρος, ***ὁ*** 'hollow, cavity'. Aristophanes (*Pax* 199+)+. ET.: *κύτος*, *τό* 'hollow'. R. FREQ.: 3.

φλύαρος, ***ὁ*** 'silly talk'. Aristophanes (*Nu.* 365)+. ET.: *φλύω* 'boil over; overflow with words'. Possibly a back-formation from *φλυᾱρέω* 'talk nonsense'; see Frisk (1960–72: ii. 1030). ACCENT: Arc. 80. 16. R. FREQ.: 2.

γαμβρός, ***ὁ*** 'connection by marriage, brother-in-law, son-in-law'. Hom. (*Il.* 5. 474+)+. ET.: *γαμέω* 'marry'. The form *γαμβρός* comes from **γαμρός* with epenthesis of *-b-*. F. FREQ.: 62.

ὄμβρος, **ὁ** 'storm of rain, thunder-storm'. Hom. (*Il.* 3. 4+)+. ET.: Root **omb^h-* of Skt *ámbhas-* n. 'water'. Corresponds to Lat. *imber* 'rain', with a change to *i*-stem declension in Lat. ACCENT: Sch. *Il.* 11. 68a (A); Eust. 831. 61. R. FREQ.: 74.

ἀγρός, **ὁ** 'field'. Hom. (*Il.* 5. 137+)+. ET.: *ἄγω* 'lead, carry'. ACCENT: Arc. 84. 10. F. FREQ.: 224. TH.

φάγρος, **ὁ** 'whetstone'. Simias (in Athenaeus 6. 327e–f = Simias fr. 27 Powell)+. ET.: Possibly from IE **b^{h}ag-ro-*, corresponding to Arm. *bark* 'bitter'. See Frisk (1960–72: ii. 980); with reservations Clackson (1994: 181–2). ACCENT: Arc. 84. 8. R. FREQ.: 0.

χάραδρος, **ὁ** 'mountain stream, torrent'. Plutarch (*Agis* 8. 1); also attested on inscriptions and as a proper name of many rivers. ET.: Variant for *χαράδρᾱ*. Frisk (1960–72: ii. 1088) rejects any connection with *χαράσσω* 'make pointed' and connects to *χέραδος*, *τό* 'silt, gravel brought down by torrents', related to *χαράδρᾱ* (almost) like *ἕδος*, *τό* 'seat' to *ἕδρᾱ* 'seat' and *ἔχθος*, *τό* 'hatred' to *ἔχθρᾱ* 'hatred'. ACCENT: (Arc. 85. 20 prescribes recessive accentuation for the river name *Χάραδρος*.) R. FREQ.: 0.

κύλινδρος, **ὁ** 'rolling stone; cylinder'. Apollonius Rhodius (2. 594)+. ET.: *κυλίνδω* 'roll'. R. FREQ.: 0.

μύδρος, **ὁ** 'red-hot mass'. Aeschylus (in Athenaeus 7. 303c = Aeschylus fr. 307. 1 Radt)+. ET.: Possibly related to *μυδάω* 'be damp' and referring originally to molten metal: Frisk (1960–72: ii. 264). R. FREQ.: 13.

πενθερός, **ὁ** 'father-in-law'. Hom. (*Il.* 6. 170+)+. ET.: Root **bend^h-* of Skt *bándhu-* m. 'kinsman', Skt *badhnā́ti* 'bind', Goth. *bindan* 'bind'. Corresponds to Lith. *beñdras* 'companion', except that Gk has substituted *-ερο-* for **-ρο-*. ACCENT: Hrd. *διχρ.* 15. 21. F. FREQ.: 15.

ἱερόν/**ἰρόν**, **τό** 'offering; temple'. Hom. (*Il.* 11. 775+)+. ET.: See App. 1.1 s.v. *ἱερός* 'filled with or manifesting divine power'. ACCENT: *ειρῶν* (for MSS *ἱρῶν*) at *Il.* 5. 178 on *P. Oxy.* ii. 223, col. 7 (3rd cent. AD); *ϊερὰ* at *Od.* 23. 277 on *P. Ryl.* i. 53, fol. 91^{v} (3rd or 4th cent. AD). F. FREQ.: OVER 500. TH.

δυναμερά, **τά** 'potent drugs'. Ps.-Bolus (in the title of a work, *Φυσικὰ δυναμερά*, in *Suda* β 482). ET.: *δύναμαι* 'be able, be strong enough to'. F. FREQ.: 0.

ἵππερος, **ὁ** 'horse-fever'. Aristophanes (*Nu.* 74). ET.: Formed from *ἵππος*, *ὁ* 'horse' on the model of names of ailments in *-ερος*, e.g. *ὕδερος*, *ὁ* 'dropsy', but also with a pun on *ἔρως* 'love'. R. FREQ.: 1.

θαλασσερός, **ὁ** *kind of eyesalve*. Galen (12. 781. 10)+. ET.: *θάλασσα*, *ἡ* 'sea'. F. FREQ.: 0.

πτερόν, **τό** 'wing'. Hom. (*Il.* 11. 454+)+. ET.: *πέτομαι*, aor. inf. *πτέσθαι* 'fly'. ACCENT: Arc. 141. 18, 157. 14. F. FREQ.: 123.

λῆρος, **ὁ** 'trash, trumpery; idle talk'. Eupolis (in Ael. Aristid. 28. 92 = Eupolis fr. 205. 2 K–A)+. ET.: See App. 1.1 s.v. *λῆρος* 'silly'. ACCENT: Arc. 78. 6. R. FREQ.: 16.

κλῆρος, **ὁ** 'lot'. Hom. (*Il.* 3. 316+)+. ET.: Considered a derivative in *-ρο-* on the root of OIr. *clār* 'board', Gk *κλῆμα*, gen. *-ατος* 'twig, branch', the idea being that a *κλῆρος* was originally the object drawn as a lot. ACCENT: Arc. 78. 2. R. FREQ.: 396. TH.

μηρός, **ὁ** (pl. **μηροί**, **οἱ** or **μῆρα**, **τά**) 'thigh'. Hom. (*Il.* 4. 146+)+. ET.: Skt *māṃsá-* n., Goth. *mimz* 'flesh', from **mēmso-*. The neuter plural *μῆρα* is likely to be an old collective, from **mēmsreH*$_2$; cf. Latin *membra* 'limbs'; see Frisk (1960–70: ii. 230–1); Vine (2002: 333). ACCENT: Sch. *Il.* 1. 464a (A); cf. Sch. *Il.* 15. 320–1a[1] (A). U. (The accent is certain, but classified here as 'U' because the accent of the masculine forms differs from that of the neuters.) FREQ.: No figure for the frequency of this word was obtained, because at the time of counting frequencies I thought the word *μηρός* should be excluded from consideration, given the plural *μῆρα* which suggests back-formation from an old collective. It was only later, on reading Vine's work on *-ro-* nouns with full-grade roots (2002), that I learned that the same possibility arises for several other Greek *-ρο-* nouns and that it was therefore arbitrary to exclude *μηρός* while including the others. But by then the version of the Perseus corpus I had used to count frequencies (Crane 1999) was no longer available.

νηρόν, **τό** or **νηρός**, **ὁ** 'water'. (Condemned by) Phryn. (*Ecl.* 27). ET.: Contracted from *νεαρός*, old derivative on the root of *νέος* 'young'. F. FREQ.: 0.

σταχυηρά, **τά** 'plants that bear ears, cereals'. Theophrastus (*HP* 8. 2. 5; LSJ s.v. also take *σταχυηρά* as a noun e.g. at Theophrastus, *HP* 1. 11. 4, but this and other examples are more easily taken as adjectival). ET.: *στάχῡς*, gen. *-υος* 'ear of corn'. Cf. App. 1.1 s.v. *σταχυηρός* 'enclosed in an ear of corn'. F. FREQ.: 0.

βόθρος, **ὁ** 'hole, trench'. Hom. (*Il.* 17. 58+)+. ET.: *βόθῡνος*, *ὁ* 'hole, trench'. R. FREQ.: 31.

ὄρθρος, **ὁ** 'time just before daybreak'. *Homeric Hymns* (4. 98)+. ET.: Probably built on the root **u̯ord*^{h}- of *ὀρθός* 'straight' (see Frisk 1960–72: ii. 416–17). ACCENT: Eust. 831. 61; cf. Van der Valk ad loc. R. FREQ.: 32. TH.

ἐχθρός, **ὁ** 'enemy'. Hesiod (*Op.* 342)+. ET.: *ἔχθος*, *τό* 'hate'. Cf. App. 1.1 s.v. *ἐχθρός* 'hated, hateful, hating'. ACCENT: Final accentuation is prescribed for the adjective *ἐχθρός* 'hated, hateful, hating' at Arc. 84. 18. F. FREQ.: OVER 500. TH.

ἐλαιρός, **ὁ** *liquid measure*. Hero (*Geom.* 23. 64). ET.: *ἔλαιον* 'olive oil'. F. FREQ.: 0.

ἄκρον, **τό** (also **ακρος**, **ὁ** Schwyzer, *DGE* 664. 21) 'highest or furthest point'. Hom. (*Il.* 5. 729+)+. Et.: ἀκμή 'point, edge'; ἀκή 'point'; ἀκών 'javelin, dart'. Cf. App. 1.1 s.v. ἄκρος 'at the furthest point'. R. Freq.: 209. Th.

νεκρός, **ὁ** 'corpse'. Hom. (*Il.* 4. 467+)+. Et.: See App. 1.1 s.v. νεκρός 'dead'. Accent: Arc. 84. 5, 84. 22 (adj. and noun not distinguished); νὲκρον at *Il.* 5. 298 on *P. Oxy.* ii. 223, col. 12 (3rd cent. AD). F. Freq.: over 500. Th.

ἀλῑτρός, **ὁ** 'sinner'. Hom. (*Il.* 23. 595)+. Et.: See App. 1.1 s.v. ἀλῑτρός 'sinful, wicked'. F. Freq.: 1.

σταυρός, **ὁ** 'upright pale or stake, cross'. Hom. (*Il.* 24. 453+)+. Et.: Noun in *-υ-ρος* on root **stH*$_2$- of ἵστημι 'stand'; exact correspondence with ON *staurr* 'stake' (see Risch 1974: 71; Frisk 1960–72: ii. 778). An alternative etymology (also involving a suffix *-ro-*) is preferred by Vries (1961: 544 s.v. *staurr*). Accent: Arc. 79. 19. F. Freq.: 20. Th.

γῦρος, **ὁ** 'ring, circle'. Menander (in Phryn. *Ecl.* 393 = Menander fr. 245 K–A +)+. Et.: Formed on the root **geu-*/**gu-* of γύαλον 'hollow', Avestan *gav-* 'hand': see Frisk (1960–72: i. 335–6, 330–1). Cf. App. 1.1 s.v. γῡρός 'rounded, curved, crooked'. Accent: Eust. 638. 59, 907. 5, 1864. 5. R. Freq.: 0.

λίγυρος, **ὁ** *precious stone*. Josephus (*AJ* 3. 168). Et.: λιγύς 'clear, sharp'. Cf. App. 1.1 s.v. λιγυρός 'clear, shrill'. Accent: At Josephus, *AJ* 3. 168, Niese prints λίγυρος but notes ad loc. that one MS ('S') has λιγυρός. R. Freq.: 0.

ἄργυρος, **ὁ** 'white metal, i.e. silver'. Hom. (*Il.* 18. 475+)+. Et.: Stem **H*$_2$erĝu-* of Lat. *arguō* 'make clear, show', *argūtus* 'clear, bright'; Skt *árjuna-* 'white, bright, silvery'; Gk ἄργυφος 'silver-shining, silver-white'. Accent: Arc. 82. 11. R. Freq.: 116. Th.

ἄλευρον, **τό** 'wheat-meal'. Herodotus (7. 119. 2)+. Et.: ἀλέω <*ἀλέϝω 'grind'. Accent: Arc. 142. 8. R. Freq.: 8.

ξυρόν, **τό** (rarely **ξυρός**, **ὁ**) 'razor'. Hom. (*Il.* 10. 173)+. Et.: ξύω 'scrape, plane'; see Risch (1974: 70). Accent: Arc. 79. 7, 141. 10, 157. 13. F. Freq.: 8.

λεπῡρόν/**λέπῡρον**, **τό** 'shell, husk, rind'. *Batrachomyomachia* (131)+. Et.: λέπω 'strip off the rind or husks, peel'. Accent: Lentz (1867–70: i. 387. 2) includes λέπῡρον in a list of Herodianic recessive words, taking Theognost. 131. 22 as evidence. Theognostus does not in fact mention the accent, although Cramer ad loc. prints λέπυρον. T. W. Allen likewise prints λέπυρον at *Batrachomyomachia* 131, but the *Suda* (λ 301) prescribes final accentuation. U. Freq.: 0.

πίτῡρον, **τό** 'bran'. Hippocrates (*Acut.* 21 (ii. 270. 9 Littré)+)+. Et.: Derivative in *-ῡ-ρο-* on root of πτίσσω 'husk, peel or winnow grain', apparently with an anaptyctic *-i-*. Accent: Arc. 142. 1–2. R. Freq.: 2.

ἀστυρόν/ἄστυρον, **τό** *diminutive of* ἄστυ 'town'. Callimachus (in *Et. Gen.* α 1316 L–L = Callimachus fr. 261. 2 Pf.+)+. ET.: ἄστυ 'town'. ACCENT: Lentz (1867–70: i. 387. 3) includes ἄστυρον in a list of Herodianic recessive words, taking Theognost. 131. 23 as evidence and reading there ἄστυρον for ἄτυρον (following Lobeck). Theognostus does not, however, mention the accent. Pfeiffer prints ἄστυρον at Callimachus fr. 261. 2 Pf., noting that the MSS of *Et. Gen.* have ἀστυρόν but appealing to Lentz (cited above) to justify recessive accentuation. Lasserre and Livadaras print ἄστυρον without comment at *Et. Gen.* α 1316 L–L (perhaps following Pfeiffer). At *Suda* α 4272 (= Callimachus fr. 260. 6 Pf.) both Adler and Pfeiffer print ἄστυρον without comment. Occurrences of the word on papyri of Callimachus are all unaccented. U. FREQ.: 0.

λάφῡρα, **τά** 'spoils taken in war'. Aeschylus (*A.* 578+)+. ET.: Root *$?lm̥b^h$- of ἀμφιλαφής 'taking in on all sides', Skt *lábhate* 'seize', etc.; see Frisk (1960–72: ii. 91); Mayrhofer (1986–2001: ii. 435 s.v. *RABH*). R. FREQ.: 80.

ζέφυρος, **ὁ** 'westerly wind'. Hom. (*Il.* 2. 147+)+. ET.: According to Risch (1968), formed on the root of ζόφος, ὁ 'darkness', with influence from words built on the root of δνοφερός 'dark' (cf. ἰο-δνεφής 'dark as the violet'), as a counterpart to *ἀργυρός 'bright'. Risch supposes the accent changed when the word was substantivized. ACCENT: *Ep. Hom. alph.* ζ 2. R. FREQ.: 49.

τάφρος, **ἡ** 'ditch, trench'. Hom. (*Il.* 7. 341+)+. ET.: Root of θάπτω < *$d^hm̥b^h$-i̯ō, aor. ἐτάφην 'pay the last dues to a corpse'; τάφος, ὁ 'burial, funeral, grave'. R. FREQ.: 150. TH.

δῶρον, **τό** 'gift, present'. Hom. (*Il.* 1. 213+)+. ET.: Root *deH_3- of δίδωμι 'give'. Corresponds to Arm. *tur* 'gift', OCS *darŭ* 'gift, thanks'. ACCENT: Arc. 141. 13. R. FREQ.: OVER 500. TH.

Examples of excluded words: ἄσαρον (etymology unclear: see Frisk (1960–72: i. 160)); βλέφαρον (etymology unclear: see Frisk (1960–72: i. 243–4)).

APPENDIX 2

Data for Chapter 7

2.1 Adjectives with suffix *-το-*

The following abbreviations are used to encode information at the end of each entry: F = finally accented; R = recessive; U = uncertain or variable accentuation, i.e. both final and recessive accentuation are attested and no decision could be made between them. Where more than one accent is attested but some decision could be reached, this decision has been explained in the note and the word has been classified as either F or R.

481 finally accented post-Homeric *-το-* adjectives, plus the following words:

δρατός (and **δαρτός**), ή, όν 'skinned, flayed'. Hom. (*Il.* 23. 169). ET.: δέρω 'skin, flay'. Cf. App. 2.2 s.v. δαρτά, τά *fish that must be skinned before dressing*. F.

ἐρατός, ή, όν 'lovely'. Hom. (*Il.* 3. 64)+. ET.: ἔραμαι 'love'. Arc. 92. 15–16, 92. 21. F.

στατός, ή, όν 'placed, standing'. Hom. (*Il.* 6. 506+)+. ET.: ἵστημι 'stand'. F.

ἑλετός, ή, όν 'that can be taken or caught'. Hom. (*Il.* 9. 409)+. ET.: ἑλεῖν 'to grasp' (aor. inf.). F.

σκελετός, ή, όν 'dried up, withered'. Plato Comicus (in Galen 18(1). 149. 13–14 = Plato Comicus fr. 200. 3 K–A)+. ET.: σκέλλω 'dry up, parch', aor. ἔσκηλα. Cf. App. 2.2 s.v. σκελετός, ὁ 'dried body, mummy'. F.

παχετός/πάχετος, ον 'thick, massive'. Hom. (*Od.* 8. 187+)+. ET.: παχύς 'thick, stout'. ACCENT: Both final and recessive accentuation are found in printed texts; cf. LSJ s.v. The transmission of recessive accentuation is perhaps related to the existence in Hellenistic epic of a neuter *s*-stem πάχετος, τό 'thickness' (possibly also at *Od.* 23. 191: doubted by Chantraine (1968–80: 866)). U.

λωβητός, ή, όν 'despitefully treated, outraged'. Hom. (*Il.* 24. 531)+. ET.: λωβάομαι 'outrage, maltreat'. F.

ἀγητός, ή, όν 'admirable, wonderful'. Hom. (*Il.* 5. 787+)+. ET.: ἀγώμενος (pres. participle) 'admiring'. F.

ποιητός, ή, όν 'made'. Hom. (*Il.* 5. 198+)+. ET.: ποιέω 'make'. ACCENT: ποιητοῖσιν at *Il.* 5. 198 on *P. Oxy.* ii. 223, col. 8 (3rd cent. AD). F.

ἀσκητός, ή, όν 'curiously wrought'. Hom. (*Od.* 4. 134+)+. ET.: ἀσκέω 'work (raw materials)'. ACCENT: Arc. 94. 2. F.

κλητός, **ή**, **όν** 'welcome, called out'. Hom. (*Il.* 9. 165+)+. ET.: *καλέω* 'call, summon'. F.

κολλητός, **ή**, **όν** 'glued together, closely joined'. Hom. (*Il.* 4. 366+)+. ET.: *κολλάω* 'glue, cement'. F.

τλητός, **ή**, **όν** 'patient'; after Homer 'to be endured'. Hom. (*Il.* 24. 49)+. ET.: *ἔτλην* 'I endured' (1st sg. aor. indicative). F.

κοσμητός, **ή**, **όν** 'well-ordered, trim'. Hom. (*Od.* 7. 127). ET.: *κοσμέω* 'order, arrange'. ACCENT: Arc. 94. 2–3. F.

νητός, **ή**, **όν** 'heaped, piled up'. Hom. (*Od.* 2. 338). ET.: *νέω* 'heap, pile up'. ACCENT: Lentz (1867–70: i. 215. 5) reconstructs *νητός* for Herodian. Theognost. 74. 16, whom Lentz adduces, does not mention the accent of *νητός*, but the words immediately surrounding *νητός* in Theognostus' list are finally accented. F.

θνητός, (**ή**), **όν** 'liable to death, mortal'. Hom. (*Od.* 5. 213+)+. ET.: *θνῄσκω* 'die'. Cf. App. 2.2.s.v. *θνητός*, *ὁ* 'mortal'. F.

ὠνητός, (**ή**), **όν** 'bought; to be bought'. Hom. (*Od.* 14. 202)+. ET.: *ὠνέομαι* 'buy'. ACCENT: Arc. 94. 3. F.

ἀγαπητός, **ή**, **όν** 'wherewith one must be content'. Hom. (*Il.* 6. 401+)+. ET.: *ἀγαπάω* 'greet with affection; be contented'. ACCENT: Arc. 94. 3. F.

ῥητός, **ή**, **όν** 'stated, specified; spoken of, famous'. Hom. (*Il.* 21. 445)+. ET.: Exact correspondence with Avestan *urvāta-* n. 'regulation, rule', from **u̯rē-to-* < **u̯rH₁to-*. Related to *ἐρῶ* 'I shall say', root **u̯erH₁-*. See Frisk (1960–72: i. 471); Sihler (1995: 186). ACCENT: Arc. 90. 2. F.

ἀρητός (and **ἀρᾱτός**), **ή**, **όν** 'prayed against; prayed for'. Hom. (*Il.* 17. 37+)+. ET.: *ἀράομαι* 'pray'. On the Homeric occurrences of *ἀρητός*, see West (2001: 121). ACCENT: Eust. 1093. 55, 1474. 45; Sch. *Il.* 17. 37a (A^{int}), b^1 (T^{il}); *Et. Gen.* *α* 1159 L–L. F.

τρητός, **ή**, **όν** 'perforated'. Hom. (*Il.* 3. 448+)+. ET.: *τετραίνω*, aor. *ἔτρησα* 'bore through, pierce'. ACCENT: Lentz (1867–70: i. 215. 6) reconstructs *τρητός* for Herodian. Theognost. 74. 16, whom Lentz adduces, does not mention the accent of *τρητός*, but the words immediately surrounding *τρητός* in Theognostus' list are finally accented. F.

δωρητός, **όν** 'open to gifts'; later 'freely given'. Hom. (*Il.* 9. 526)+. ET.: *δωρέω* 'give, present'. ACCENT: Arc. 94. 2. F.

νεμε(σ)σητός, **ή**, **όν** 'causing indignation; worthy of indignation'. Hom. (*Il.* 3. 410+)+. ET.: *νεμεσάω* 'feel just resentment'. F.

μῑσητός/**μῑ́σητος**, **η**, **ον** 'hateful; lustful, lewd'. Aeschylus (*A.* 1228)+. ET.: *μῑσέω* 'hate'. ACCENT: Both final and recessive, and even intermediate, accentuation are transmitted in manuscripts: see Kassel and Austin on Cratinus fr. 354 K–A. Lentz (1867–70: i. 220. 6) includes *μῑσητός* as a Herodianic word, but apparently only on the basis of the

city name *Μισητός* transmitted, without comment on the accent, at Steph. Byz. 454. 14. Some appear to have accented the substantivized feminine *μῑσητή/μῑσήτη* differently for different meanings: see Eust. 1650. 64; Ammonius 322. For modern views see again Kassel and Austin on Cratinus fr. 354 K–A. U.

κτητός, ***ή***, ***όν*** 'that may be acquired'. Hom. (*Il.* 9. 407)+. ET.: *κτάομαι* 'acquire'. F.

μαχητός, ***ή***, ***όν*** 'to be fought with'. Hom. (*Od.* 12. 119). ET.: *μάχομαι* 'fight'. F.

κλειτός, ***ή***, ***όν*** 'renowned, famous'. Hom. (*Il.* 3. 451+)+. ET.: From **kleu̯etós*; cf. *κλέω* < **κλέϝω* 'celebrate'; see Vine (1998: 16 (with n. 29), 76). ACCENT: Sch. *Il.* 12. 66a (A). F.

κριτός, ***ή***, ***όν*** 'separated, picked out, chosen'. Hom. (*Il.* 7. 434+)+. ET.: *κρῑ́νω* < **krin-i̯ō* 'distinguish, choose'. An exact correspondence with Latin *certus* < **kritos*. ACCENT: Final accentuation is prescribed for the personal name *Κριτός*, and implied for the adjective, at Arc. 90. 10. F.

πλαγκτός, (***ή***), ***όν***, 'wandering, roaming; erring, distraught'. Hom. (*Od.* 21. 363; cf. *Od.* 12. 61, 23. 327)+. ET.: *πλάζω*, aor. *ἔπλαγξα* 'turn aside or away from'. F.

πλεκτός, ***ή***, ***όν*** 'plaited, twisted'. Hom. (*Il.* 22. 469+)+. ET.: *πλέκω* 'plait, make by plaiting'. ACCENT: Arc. 91. 19. F.

ὀρεκτός, ***ή***, ***όν*** 'stretched out'; after Homer also 'longed for'. Hom. (*Il.* 2. 543)+. ET.: *ὀρέγω* 'reach, stretch, stretch out'. ACCENT: Arc. 95. 19–20. F.

πηκτός, ***ή***, ***όν*** 'stuck in, fixed; built'. Hom. (*Il.* 10. 353+)+. ET.: *πήγνῡμι* 'stick or fix in'. ACCENT: Final accentuation is prescribed for the substantivized feminine *πηκτή* 'musical instrument' at Arc. 132. 7. F.

ῥηκτός, ***ή***, ***όν*** 'that can be broken, penetrable'. Hom. (*Il.* 13. 323)+. ET.: *ῥήγνῡμι* 'break asunder'. F.

εὐκτός, ***ή***, ***όν*** 'wished for, desired'. Hom. (*Il.* 14. 98)+. ET.: *εὔχομαι* 'pray'. F.

ὀρυκτός, ***ή***, ***όν*** 'dug, formed by digging'. Hom. (*Il.* 8. 179+)+. ET.: *ὀρύσσω*, aor. *ὤρυξα* 'dig'. F.

τυκτός, ***ή***, ***όν*** 'finished; well-made'. Hom. (*Il.* 5. 831+)+. ET.: *τεύχω* 'make ready, make'. F.

πτυκτός, ***ή***, ***όν*** 'folded'. Hom. (*Il.* 6. 169)+. ET.: *πτύσσω*, aor. *ἔπτυξα* 'fold'. F.

φυκτός, ***ή***, ***όν*** 'to be escaped; avoidable'. Hom. (*Il.* 16. 128+). ET.: *φεύγω*, aor. *ἔφυγον* 'flee'. F.

ὑφαντός, ***ή***, ***όν*** 'woven'. Hom. (*Od.* 13. 136+)+. ET.: *ὑφαίνω*, aor. *ὕφηνα* 'weave'. ACCENT: Arc. 95. 16. F.

ῥαπτός, ***ή***, ***όν*** 'stitched, patched'. Hom. (*Od.* 24. 228+)+. ET.: *ῥάπτω* 'sew together'. F.

λεπτός, **ή**, **όν** 'peeled, husked; fine'. Hom. (*Il.* 18. 595+)+. ET.: *λέπω* 'strip off the rind or husks, peel, bark'. F.

στρεπτός, **ή**, **όν** 'easily twisted, pliant; to be bent or turned'. Hom. (*Il.* 5. 113+)+. ET.: *στρέφω* 'turn about or aside'. ACCENT: *στρεπτοῖο* at *Il.* 5. 113 on *P. Oxy.* ii. 223, col. 5 (3rd cent. AD). F.

γναμπτός, **ή**, **όν** 'curved, bent'. Hom. (*Il.* 11. 416+)+. ET.: *γνάμπτω* 'bend, curve'. F.

ὀπτός, **ή**, **όν** 'roasted, broiled'. Hom. (*Od.* 16. 443+)+. ET.: Likely to be a deverbative adjective with suffix *-το-*, to which a new verb *ὀπτάω* 'roast, broil' was formed; see Frisk (1960–72: ii. 406). F.

κρυπτός, **ή**, **όν** 'hidden, secret'. Hom. (*Il.* 14. 168)+. ET.: *κρύπτω* 'hide, cover'. F.

ἴμερτός, **ή**, **όν** 'longed for, desired, lovely'. Hom. (*Il.* 2. 751)+. ET.: *ἵμείρω* 'long for, desire'. ACCENT: Arc. 95. 16. F.

κυρτός, **ή**, **όν** 'bulging, swelling'. Hom. (*Il.* 4. 426+)+. ET.: Built on the same root as Latin *curu̯us* 'curved'; see Frisk (1960–72: ii. 55). ACCENT: Arc. 91. 2. F.

ὀνομαστός, **ή**, **όν** 'named, to be named'. Hom. (*Od.* 19. 260+)+. ET.: *ὀνομάζω* 'speak of by name, address by name'. ACCENT: Arc. 96. 5. F.

ἀσπαστός, **ή**, **όν** 'welcome'. Hom. (*Od.* 5. 398+)+. ET.: *ἀσπάζομαι* 'welcome kindly, greet'. F.

κεστός, **ή**, **όν** 'stitched, embroidered'. Hom. (*Il.* 14. 214)+. ET.: From **κεντ-τός*; cf. *κεντέω* 'prick'. See Frisk (1960–72: i. 820). ACCENT: Arc. 91. 14. F.

ἀκεστός, **ή**, **όν** 'curable'. Hom. (*Il.* 13. 115)+. ET.: *ἄκος*, *τό* 'cure'; *ἀκέομαι* 'cure'. Cf. Frisk (1960–72: i. 56). F.

ξεστός, **ή**, **όν** 'hewn, shaved, planed'. Hom. (*Il.* 18. 504+)+. ET.: *ξέω* 'shave or plane (timber); scrape, polish'. See Frisk (1960–72: ii. 335–6). F.

μνηστός, **ή**, **όν** 'wooed and won, wedded'; after Homer also 'betrothed'. Hom. (*Il.* 6. 246+)+. ET.: *μνάομαι* 'woo, court'. F.

ληϊστός (and **λεϊστός**), **ή**, **όν** 'to be carried off as booty, won by force'. Hom. (*Il.* 9. 406+). ET.: *ληΐζομαι* 'carry off as booty'. ACCENT: Arc. 96. 5. F.

κληϊστός (and **κληστός**, **κλειστός**), **ή**, **όν** 'that can be shut or closed'. Hom. (*Od.* 2. 344)+. ET.: *κλείω*, Ion. *κληΐω* 'shut, close, bar'. F.

πιστός, **ή**, **όν** 'to be trusted or believed, faithful; trustworthy'. Hom. (*Il.* 3. 269+)+. ET.: *πείθω* 'persuade', *πείθομαι* 'trust in'. ACCENT: Arc. 91. 13. F.

ὑβριστός/**ὔβριστος**, **η**, **ον** 'insolent, outrageous'. Pherecrates (in e.g. Photius *α* 782 Theodoridis = Pherecrates fr. 173 K–A)+. ET.: *ὑβρίζω* 'behave insolently'. ACCENT: Both final and recessive accents are transmitted in manuscripts: see Kassel and Austin on Pherecrates fr. 173 K–A. At Photius *α* 782 Theodoridis ≈ Synag. Σ^{b} *α* 748

Cunningham, *ὕβριστος* is said to be similar in form to superlatives in *-ιστο-* such as *βέλτιστος*, *κάλλιστος*, *κράτιστος*. A synchronic analysis as a superlative in *-ιστο-* (whether or not historically justified) would help to account for the recessive variant. U.

πρῑστός, *ή*, *όν* 'sawn'. Hom. (*Od.* 18. 196+)+. ET.: *πρῑ́ω*, *πρίζω* 'saw'. F.

ὀνοστός, *ή*, *όν* 'to be blamed or scorned'. Hom. (*Il.* 9. 164)+. ET.: *ὄνομαι* 'blame, find fault with, treat scornfully'. F.

κλυτός, *ή*, *όν* 'renowned, glorious'. Hom. (*Il.* 2. 854+)+. ET.: Cognate with Skt *śrutá-* 'famous'. Built on the root of *κλέω* < **κλέϝω* 'tell of, make famous'. ACCENT: Arc. 90. 19. F.

πινυτός, *ή*, *όν* 'prudent, discreet'. Hom. (*Od.* 1. 229+)+. ET.: Related to *πέπνῡμαι* 'be conscious, in full possession of one's faculties' and *πινύσκω* 'make prudent, admonish, correct'. The exact formation of *πινυτός* is disputed; see Frisk (1960–72: ii. 508–9), with further bibliography. ACCENT: Arc. 94. 17. F.

ῥῡτός, *ή*, *όν* 'quarried (?)'. Hom. (*Od.* 6. 267+)+. ET.: Probably connected to *ἐρύω* 'draw, drag', but meaning unclear; see Frisk (1960–72: ii. 667). ACCENT: Arc. 90. 18. F.

χυτός, *ή*, *όν* 'poured, shed; heaped up'. Hom. (*Il.* 6. 464+)+. ET.: *χέω* < **χέϝω* 'pour'. ACCENT: Arc. 90. 18. F.

χολωτός, *ή*, *όν* 'angry, wrathful'. Hom. (*Il.* 4. 241+)+. ET.: *χόλος*, *ὁ* 'gall, bile'. F.

πλωτός, (*ή*), *όν* 'floating'. Hom. (*Od.* 10. 3)+. ET.: *πλέω*, Ion. *πλώω* 'sail, go by sea'. ACCENT: Arc. 90. 2. F.

γνωτός, (*ή*), *όν* 'perceived, understood, known'. Hom. (*Il.* 7. 401+)+. ET.: *γιγνώσκω* 'come to know, perceive'. ACCENT: Hrd. *μον.* 943. 31; Theognost. 74. 19 (implicit). F.

δῑνωτός, *ή*, *όν* 'turned, rounded'. Hom. (*Il.* 3. 391+)+. ET.: *δῑνεύω* and *δῑνέω* 'spin round in a circle'; late *δῑνόω* 'turn with a lathe'. F.

τρωτός, *ή*, *όν* 'vulnerable'. Hom. (*Il.* 21. 568)+. ET.: *τιτρώσκω* 'wound'. ACCENT: Hrd. *μον.* 943. 31. F.

Examples of excluded words: *γελαστός* (manuscript reading at *Od.* 8. 307, but editors generally read the ancient variant *ἀγέλαστα*; otherwise attested only as a conjecture in Babrius).

2.2 Nouns with Suffix *-το-*

The following abbreviations are used to encode information at the end of each entry: (*a*) F = finally accented; R = recessive; U = uncertain or variable accentuation, i.e. both final and recessive accentuation are attested and no decision could be made between them. Where more than one accent is attested but some decision could be reached, this decision has been explained in the note and the word has been classified as either F or R. (*b*) O = word formed from *o*-grade verbal root + simple suffix *-το-* (*o* not due to **H*$_3$ or to Aeolic treatment of a

vocalic liquid; nothing added to the root apart from -το-). (*c*) FREQ.: the figure given after 'FREQ.' is the number of occurrences of the word in the Perseus Digital Library corpus (Crane 1999), which contained *c.*3,400,000 words at the time of use (January 1999). This number is used as a frequency index.

κάματος, **ὁ** 'toil'. Hom. (*Il.* 4. 230+)+. ET.: Built on the root of *κάμνω* 'work, toil'. On the formation of *κάματος*, see pp. 234–6. ACCENT: Perhaps implied by Eust. 341. 20. R. FREQ.: 55.

θάνατος, **ὁ** 'death'. Hom. (*Il.* 1. 60+)+. ET.: Built on the root **d*^{h}*nH*$_{2}$- or **d*^{h}*u̯nH*$_{2}$- of *θνήσκω* 'die'. On the formation of *θάνατος*, see pp. 234–6. ACCENT: Arc. 92. 15. R. FREQ.: OVER 500.

στρατός, **ὁ** 'army, host'. Hom. (*Il.* 1. 10+)+. ET.: Cognate with Skt *stṛta-* 'bestrewn; overthrown'. Built on a root **ster-*, perhaps ultimately a variant of the root **sterH*$_{3}$- of *στόρνῡμι* 'spread, strew'; see Chantraine (1968–80: 1061–2); Beekes (1969: 243, 245, 280–2); Mayrhofer (1986–2001: ii. 755 s.v. *STAR*). ACCENT: Arc. 90. 9; Sch. *Il.* 6. 202c (A); *Et. Gud.* 264. 1 Stef.; Eust. 636. 62; *Ep. Hom. alph.* *π* 185. F. FREQ.: OVER 500.

ὄρχατος, **ὁ** 'row of trees; orchard, garden'. Hom. (*Il.* 14. 123+)+. ET.: Related to *ὄρχος*, *ὁ* 'row of trees; orchard, garden'; further details unclear. See Frisk (1960–72: ii. 434). ACCENT: Eust. 971. 56. R. FREQ.: 6.

ἀετός or **αἰετός**, **ὁ** 'eagle'. Hom. (*Il.* 8. 247+)+. ET.: Likely to be from **au̯i̯etos*, with stem of Lat. *auis* 'bird' and suffix -*ετο*-. See Frisk (1960–72: i. 36); Vine (1998: 11); for a reconstruction of the root in terms of laryngeals, and phonological discussion, see Peters (1980: 12, 216–17 n. 168). ACCENT: Arc. 93. 8. F. FREQ.: 116.

παγετός/**πάγετος**, **ὁ** 'frost'. Pindar (*Pae.* 9. 17 S–M)+. ET.: *πάγος*, *ὁ* 'frost'; *πήγνῡμι* 'stick or fix in', aor. pass. *ἐπάγην*. ACCENT: Arc. 93. 7 prescribes recessive accentuation but notes that final accentuation occurs in the *συνήθεια*, a word that in Herodian usually refers to the Koine. On the oddity of this statement for Herodian see Ch. 2 n. 46. Ammonius (21) and Io. Phil. (*Diff.* *π* 6 A Daly) prescribe different accentuations for different meanings. Cf. Wheeler (1885: 117 n. 1). U. FREQ.: 2.

σταγετός, **ὁ** 'drop'. Aquila (word from Aquila in Origen, *Hexapla*, Pr. 19. 13)+. ET.: *στάζω* 'drop, let fall', aor. *ἔσταξα*. F. FREQ.: 0.

πνῑγετός, **ὁ** 'choking, stifling'. Ptolemy (*Phas.* 63. 1+). ET.: *πνῖγος*, *τό* 'choking, stifling; stifling heat'; *πνῑ́γω* 'choke, throttle, strangle', aor. *ἔπνῑξα*. F. FREQ.: 0.

δακετόν/**δάκετον**, **τό** 'biting animal'. Aristophanes (*Av.* 1069)+. ET.: *δάκνω* 'bite', aor. *ἔδακον*; *δάκος*, *τό* 'biting animal'. On the formation see Vine (1998: 71). ACCENT: Final and recessive accents both found in printed texts. For example, Wimmer prints *δακετά* at

Theophrastus, *HP* 9. 19. 3; Dunbar prints δάκετα at Aristophanes, *Av*. 1069. U. FREQ.: 1.

τοκετός, **ὁ** 'childbirth, delivery'. Hippocrates (*Aër*. 4 (ii. 22. 9 Littré)+) +. ET.: Probably denominative; cf. *τόκος*, *ὁ* 'childbirth' (so Vine (1998: 14)). ACCENT: Arc. 93. 11. F. FREQ.: 1.

ἀλετός/**ἄλετος**, **ὁ** 'grinding'. Plutarch (*Ant*. 45. 7+). ET.: *ἀλέω* 'grind'. ACCENT: At Plutarch, *Ant*. 45. 7, Lindskog, Ziegler, and Gärtner print *ἀλετὸν*, but they note that MS 'L' has *ἄλετον*. At the only other occurrence of the word, Plutarch, *Moralia* 289f, Nachstädt, Sieveking, and Titchener print *ἀλέτῳ* without textual comment. U. FREQ.: 0.

σκελετός, **ὁ** 'dried body, mummy'. Phrynichus Comicus (in Athenaeus 2. 44d = Phrynichus Comicus fr. 74. 3 K–A)+. ET.: *σκέλλω* 'dry up, parch', aor. *ἔσκηλα*. Cf. App. 2.1 s.v. *σκελετός* 'dried up, withered'. F. FREQ.: 0.

ἔμετος, **ὁ** 'vomiting'. Herodotus (2. 77. 2)+. ET.: *ἐμέω* 'vomit'. Cf. the adjective *ἐμετός* 'vomited' (*Suda* ε 975). ACCENT: Arc. 93. 5. R. FREQ.: 3.

κάπετος and **σκάπετος**, **ἡ** 'ditch, trench'. Hom. (*Il*. 18. 564+)+. ET.: *σκάπτω* 'dig', aor. *ἔσκαψα*. R. FREQ.: 6.

κοπετός, **ὁ** 'noise (esp. lamentation)'. Eupolis (in *Et*. *Gud*. 290. 19 d^2 Stef. = Eupolis fr. 375 K–A)+. ET.: *κόπτω* 'cut, strike'; *κόπος*, *ὁ* 'striking, beating'. ACCENT: Arc. 93. 10–11. F. FREQ.: 1.

ἑρπετόν, **τό** 'creeping thing; reptile'. Hom. (*Od*. 4. 418)+. ET.: *ἕρπω* 'move on the ground, walk'. ACCENT: Arc. 142. 18–19. F. FREQ.: 9.

τυπετός, **ὁ** 'beating the breast, mourning'. Dion. Hal. (*Antiq*. *Rom*. 2. 19. 2+). ET.: *τύπτω* 'beat, strike'. F. FREQ.: 0.

κινώπετον, **τό** 'venomous beast, esp. serpent.' Callimachus (*Hymns* 1. 25)+. ET.: According to Chantraine (1968–80: 534), probably formed from *κνώψ*, gen. *κνωπός* 'venomous beast', with anaptyctic *-ι-* and suffix *-ετο-*. For a different view (*κνώψ* a syncopated form of *κινώπετον*) see Szemerényi (1964: 74 n. 5). R. FREQ.: 0.

πυρετός, **ὁ** 'burning heat, fiery heat; fever'. Hom. (*Il*. 22. 31)+. ET.: *πῦρ*, gen. *πυρός* 'fire'. ACCENT: Arc. 93. 11. F. FREQ.: 19.

ὑετός, **ὁ** 'rain, heavy shower'. Hom. (*Il*. 12. 133)+. ET.: *ὕω* 'rain'. ACCENT: Arc. 93. 8 (although the word does not fit the context and has probably been displaced from the rule that follows: see Schmidt ad loc.); Sch. *Il*. 11. 495 (A). F. FREQ.: 13.

νιφετός, **ὁ** 'falling snow, snowstorm'. Hom. (*Il*. 10. 7+)+. ET.: *νείφω* 'snow', *νίφα* (acc.) 'snow'. On the formation, see Vine (1998: 11–12). ACCENT: Arc. 93. 8 (although the word does not fit the context and has probably been displaced from the rule that follows: see Schmidt ad loc.). F. FREQ.: 7.

συρφετός, **ὁ** 'sweepings, refuse, litter'. Hesiod (*Op*. 606)+. ET.: Denominative to *σύρφος· θηρίδιον μικρόν, ὁποῖον ἐμπίς* ('a small creature, like a

gnat'; Hesychius σ 2795 Schmidt); *σύρφαξ* 'rabble'; *σύρφη· φρύγανα* ('firewood'; Hesychius σ 2794 Schmidt). See Richter (1909: 20); Solta (1963: 170); Vine (1998: 14). ACCENT: Arc. 93. 11. F. FREQ.: 4.

ῥυᾱ́χετος, **ὁ** 'unstable crowd'. Aristophanes (*Lys.* 170, with variant readings). ET.: Likely to be a denominative on the stem of *ῥύαξ*, gen. *ῥύᾱκος* 'rushing stream' (but the source of the aspiration of the -χ- is obscure); see Richter (1909: 20); Schwyzer (1953: 501); Solta (1963: 170). R. FREQ.: 1.

ὀχετός, **ὁ** 'means for carrying water, water pipe'. Pindar (*O.* 5. 12+)+ (but presupposed by Homeric *ὀχετηγός* 'drawing off water by a conduit'; so Vine (1998: 15), with *ὀχετεύω* apparently for *ὀχετηγός*). ET.: Either deverbative to *ὀχέω* 'hold fast; carry' or denominative to *ὄχος* 'support' (Vine 1998: 15). F. FREQ.: 28.

βροχετός, **ὁ** 'wetting, rain'. *Greek Anthology* (6. 21. 3). ET.: *βρέχω* 'wet', *βροχή* 'rain'. On the formation, see Vine (1998: 70 n. 170); Solta (1963: 170); Waanders (1974: 4 with n. 4). F. FREQ.: 0.

τρυγητός/τρύγητος, **ὁ** 'gathering of fruits, harvest'. Thucydides (4. 84. 1) +. ET.: *τρυγάω* 'gather in the fruit or crop'; *τρύγη* 'grain crop, corn'. ACCENT: Arc. (93. 16–17) prescribes recessive accentuation for the meaning 'harvest time', final accentuation for the meaning 'harvested fruit'; similarly Synag. α 385 Cunningham. Theognost. (75. 13–15) makes almost the same distinction, although he designates the finally accented form as denoting the activity. The opposite distinction is made by Ammonius 38; *Et. Gud.* 113. 23–5 d^2 Stef. Final accent prescribed by Tz. Hsd. *Op.* 386, mentioning the doctrine prescribing final accentuation for one meaning and recessive accentuation for another. Cf. Wheeler (1885: 117 n. 1). U. FREQ.: 1.

ἀλαλητός, **ὁ** 'shout of victory'. Hom. (*Il.* 2. 149+)+. ET.: *ἀλαλή* 'loud cry'. Leumann (1950: 211) regards *ἀλαλητός* as derived originally from *ἀλάλημαι* (perf. with pres. sense) 'wander, roam about' and then reinterpreted to mean 'shout'; dismissed by Chantraine (1968–80: 53). ACCENT: Arc. 93. 19. F. FREQ.: 11.

ἄμητός/ἄμητος, **ὁ** 'reaping, harvesting.' Hom. (*Il.* 19. 223)+. ET.: *ἄμάω* 'reap corn, cut'. ACCENT: The following sources distinguish between a recessive *ἄμητος* meaning 'harvest time' and a finally accented *ἀμητός* denoting 'harvested fruit' and/or the activity 'harvesting': Sch. *Il.* 19. 221–4a^1 (b(BE^3)T) and a^2 (A^a); Synag. α 385 Cunningham; Sch. *Il.* 19. 221–4 (M^{1}P^{11}U^4), quoted by Erbse on Sch. *Il.* 19. 221–4a^1; Eust. 1181. 32; *Et. Gud.* 113. 15–114. 2 d^1 Stef.; Arc. 93. 18; Theognost. 75. 13–15; *An. Ox.* 2. 331. 25–332. 1; and other sources cited by Erbse on Sch. *Il.* 19. 221–4a^1. The opposite doctrine, that recessive *ἄμητος* denotes the harvested fruit whereas finally accented *ἀμητός* denotes the time of harvest, is found at Ammonius 38; *Et. Gud.* 113. 23–5 d^2 Stef.; Sch. D. *Il.* 19. 223/Z^S (ZYQXR);

Tz. Hsd. *Op.* 381. Tz. Hsd. *Op.* 386 prescribes final accentuation for both meanings. Cf. Wheeler (1885: 117 n. 1). U. FREQ.: 6.

λικμητός, **ὁ** 'winnowing'. *Greek Anthology* (6. 225. 5)+. ET.: λικμάω 'winnow'. F. FREQ.: 0.

ψάμμητον, **τό** *kind of cake*. Harpocration (ε 14). ET.: Possibly related to ψάμμος, ἡ 'sand'. R. FREQ.: 0.

θνητός, **ὁ** 'mortal'. Hom. (*Il.* 1. 574+)+. ET.: Built on the root of θνῄσκω 'die' in its zero-grade form $*d^{h}nH_{2}$- or $*d^{h}\mu nH_{2}$-. Cf. App. 2.1 s.v. θνητός 'mortal'. F. FREQ.: 193.

ἀλοητός/**ἀλόητος** (also written with ἁ-), **ὁ** 'threshing'. Xenophon (*Oec.* 18. 5, if this is the correct reading here); Septuagint (Le. 26. 5)+. ET.: ἀλοάω 'thresh'. ACCENT: Tz. Hsd. *Op.* 386 prescribes final accentuation and mentions a doctrine prescribing final accentuation for one meaning and recessive accentuation for another. U. FREQ.: 0.

λοπητός, **ὁ** 'time of bark peeling off'. Theophrastus (*HP* 5. 1. 1). ET.: λοπάω 'let bark peel off'. F. FREQ.: 0.

σπορητός/**σπόρητος**, **ὁ** 'sown corn, growing corn; sowing of corn'. Aeschylus (*A.* 1392)+. ET.: σπείρω < *σπέρ-ι̯ω 'sow (seed)'. ACCENT: MSS at Aeschylus, *A.* 1392 vary between final and recessive accentuation (see West ad loc.). U. FREQ.: 0.

μασητά, **τά** 'chewings (of food)'. Soranus (*Gyn.* 2. 17. 29). ET.: μασάομαι 'chew'. F. FREQ.: 0.

ποτητά, **τά** 'birds'. Hom. (*Od.* 12. 62)+. ET.: ποτάομαι 'fly hither and thither'. F. FREQ.: 1.

θυητά, **τά** 'fumigations'. Aretaeus (6. 10. 6+). ET.: θύω 'offer burnt sacrifice'. F. FREQ.: 0.

σκαφητός, **ὁ** 'hoeing, digging'. Theophrastus (*CP* 3. 16. 2)+. ET.: σκάπτω 'dig'. F. FREQ.: 0.

ἑψητός, **ὁ** *small fish boiled for eating*. Aristophanes (*V.* 679+)+. ET.: ἕψω 'boil', aor. ἥψησα. Cf. the adjective ἑψητός 'boiled'. ACCENT: Arc. 93. 18 prescribes final accentuation for the adjective ἑψητός 'boiled'. F. FREQ.: 1.

ῥειτά, **τά** and **ῥειτός** or **ῥῖτος**, **ὁ** 'sacred stream(s) at Eleusis'. Sophocles (in Photius 485. 10–11 Porson = Sophocles fr. 1089 Radt)+. ET.: From *ῥϵϝϵτος; cf. ῥέω < *ῥέϝω 'flow'. ACCENT: *EM* (703. 15) reports that Orus prescribed ῥειτός, with -ει- and final accent, while Herodian prescribed ῥῖτος, with -ι- and recessive accent. U. FREQ.: 0.

λήϊτον, **τό** 'town-hall, council-chamber'. Herodotus (7. 197. 2)+. ET.: λᾱός (Ion. ληός), ὁ 'people'. R. FREQ.: 2.

βόλιτον, **τό** 'cow dung'. Aristophanes (*Eq.* 658+)+. ET.: Likely to be a derivative on the root of βάλλω 'throw'; see Frisk (1960–72: i. 249). R. FREQ.: 2.

οἶτος, **ὁ** 'fate, doom'. Hom. (*Il.* 3. 417+)+. ET.: Usually connected with εἶμι 'I shall go'. For various possible correspondences in other IE

languages, see Table 7(a)ii and (with further bibliography) Frisk (1960–72: ii. 371) and Lloyd, Lühr, and Springer (1998: 977–8). ACCENT: Arc. 89. 15; Sch. *Il.* 11. 24b (A); Eust. 828. 16; Theognost. 74. 9. R. O. FREQ.: 14.

κοῖτος, **ὁ** 'sleep, going to rest'. Hom. (*Od.* 2. 358+)+. ET.: *κεῖμαι* 'lie'. ACCENT: Theognost. 74. 9. R. O. FREQ.: 14.

σπαρακτόν, **τό** 'rubble'. Hero (*Stereom.* 2. 33). ET.: *σπαράσσω* 'tear, rend'. F. FREQ.: 0.

ἄτρακτος, **ὁ/ἡ** 'spindle; arrow'. Aeschylus (in Sch. Ar. *Av.* 807a = Aeschylus fr. 139. 2 Radt)+. ET.: A derivative of the primary verb to which Latin *torqueō* 'turn' is an intensive; see Frisk (1960–72: i. 180), with discussion of the phonological difficulties and further bibliography. R. FREQ.: 17.

πόκτος, **ὁ** 'fleece'. *Lyrica adespota* (in *Et. Gen.* = *Lyrica adespota* fr. 971 Page)+. ET.: *πέκω* 'shear'. ACCENT: Perhaps to be read at Arc. 91. 21; see Schmidt's index, s.v. *πόκτος*. R. O. FREQ.: 0.

φρῡκτός, **ὁ** 'firebrand, torch'. Aeschylus (*A.* 30+)+. ET.: *φρῡ́γω* 'roast'. Cf. the adjective *φρῡκτός* 'roasted'. F. FREQ.: 9.

βοτόν, **τό** 'farm animal'. Hom. (*Il.* 18. 521)+. ET.: Root of *βόσκω* 'feed, tend'. ACCENT: Arc. 142. 10 (Schmidt excludes the following words *ἡ βοτάνη*). F. FREQ.: 17.

βίοτος, **ὁ** 'life, means of living'. Hom. (*Il.* 4. 170+)+. ET.: *βίος*, *ὁ* 'life', *βιόω* 'live'. ACCENT: Arc. 94. 13; Eust. 94. 32 (implicit). Theognost. (75. 28–9) appears to know of a finally accented *βιοτός* as well as a recessive *βίοτος*; I do not know what to make of this passage but he appears to think of *βιοτός* as a separate word from *βίοτος*, not as an accentual variant. R. FREQ.: 124.

πότος, **ὁ** 'drinking bout'. Cratinus (in Athenaeus 11. 494c = Cratinus fr. 199. 2 K–A+)+. ET.: Root of *πῑ́νω* 'drink'. ACCENT: Arc. 90. 7; Sch. *Il.* 6. 202c (A); Eust. 636. 62; *EM* 685. 5; Sch. Luc. 90. 19. R. FREQ.: 50.

ποτόν, **τό/ποτός**, **ὁ** 'drink'. Hom. (*Il.* 1. 470+)+. ET.: Root of *πῑ́νω* 'drink'. ACCENT: Arc. 90. 7–8; *EM* 685. 4; Sch. Luc. 90. 19. F. FREQ.: 126.

ἀροτός/ἄροτος, **ὁ** 'corn-field'. Hom. (*Od.* 9. 122)+. ET.: *ἀρόω* 'plough, till'. Cf. the adjective *ἀροτός* 'arable' (Theognost. 95. 14). ACCENT: Recessive accent prescribed by Arc. 94. 13 (although the MSS have *εὔροτος* here: see Schmidt ad loc.), Theognost. 75. 28 (but no distinction is made between the noun and the adjective). Tz. Hsd. *Op.* 386 prescribes final accentuation and mentions also a doctrine prescribing final accentuation for one meaning and recessive accentuation for another; the same doctrine seems to be assumed by Eust. 811. 27 (cf. Van der Valk ad loc.). Cf. Wheeler (1885: 117 n. 1). U. FREQ.: 21.

βρότος, **ὁ** 'blood that has run from a wound, gore'. Hom. (*Il.* 14. 7+). ET.: Normally compared to Skt *mūrtá-* 'run'; cf. Skt *mūrchati* 'become

solid, thicker'. If Skt *mūrtá-* and Gk *βρότος* are indeed cognate, the Skt form derives from an IE form **mr̥Htó-*, the Gk form (which would have Aeolic vocalism) from a **mr̥tó-*, without laryngeal (Mayrhofer 1986–2001: ii. 368; cf. Beekes 1969: 243). Leumann (1950: 124–7) proposes instead that *βρότος* is a back-formation from *ἄμβροτος* 'immortal', reinterpreted as 'bloodless'; doubted by Chantraine (1968–80: 198). ACCENT: Arc. 90. 6; Sch. *Il.* 14. 7b[1] (T), b[2] (b(BCE[3])). R. FREQ.: 5.

βροτός, *ὁ*(/*ἡ*) 'mortal man(/woman)'. Hom. (*Il.* 1. 272+)+. ET.: A substantivization of the adjective *βροτός* 'mortal'. Root of Lat. *morior* 'die', Skt *mriyáte* 'die', etc. Cognate with Skt *mr̥tá-* 'dead', Avestan *məɹəta-* 'dead', Arm. *mard* 'person'. The Greek form has Aeolic vocalism, but not Aeolic recessive accentuation. The Greek meaning 'mortal' (rather than 'dead') may well have originated in the negative compound *ἄμβροτος* 'immortal': for bibliography see Leumann (1950: 127). ACCENT: Arc. 90. 6–7; Sch. *Il.* 6. 202c (A); Sch. *Il.* 14. 7b[1] (T), b[2] (b(BCE[3])); Eust. 636. 63; *Et. Gud.* 264. 1 Stef. F. FREQ: OVER 500.

σκηπτός, *ὁ* 'thunderbolt'. Aeschylus (*Pers.* 715)+. ET.: *σκήπτω* < **σκᾰ́πι̯ω* 'let fall, hurl upon'. F. FREQ.: 6.

καμπτός, *ὁ* 'turning-point'. Aquila (word from Aquila in Origen, *Hexapla*, Pr. 2. 9)+. ET.: *κάμπτω* < **κάμπ-ι̯ω* 'bend'. Cf. the adjective *καμπτός* 'flexible'. F. FREQ.: 0.

ἑρπτόν, *τό* 'creeping thing, reptile'. Aristotle (in Eust. 481. 36, perhaps referring to the quotation from Heraclitus (fr. B 11 D–K) at Aristotle, *Mu.* 401[a]10, but the MSS of Aristotle have *ἑρπετὸν* here: see Van der Valk on Eust. 481. 36). ET.: *ἕρπω* 'move on the ground, walk'. F. FREQ.: 0.

δαρτά, *τά fish that must be skinned before dressing.* Mnesitheus (?) (in Athenaeus 8. 357c; not clear whether the word is attributed to Mnesitheus)+. ET.: *δέρω* 'skin, flay'. Cf. App. 2.1 s.v. *δρατός* (and *δαρτός*) 'skinned, flayed'. F. FREQ.: 0.

σπαρτός*/*σπάρτος, *ὁ*/*ἡ* and ***σπαρτόν*/*σπάρτον***, *τό* 'Spanish broom (a plant)'. Xenophon (*Cyn.* 9. 13)+. ET.: Frisk (1960–72: ii. 758–9) assumes a *-το-* derivative to a lost verb that also underlies *σπάρξαι* (aor. inf.) 'swathe', *σπεῖρα*, *ἡ* 'anything twisted or wound', *σπυρίς*, gen. *-ίδος* 'large basket'. ACCENT: Lentz (1867–70: i. 390. 5) includes a word *σπάρτον* as Herodianic. The passage from the *Epimerismi Homerici* that he cites as evidence does not, however, mention the accent. Dyck at *Ep. Hom. alph.* *σ* 7 prints *σπαρτόν*, as well as two examples of *σπάρτα*; cf. *Ep. Hom. alph.* *σ* 44 with Dyck ad loc. U. FREQ.: 1.

σπαρτόν*/*σπάρτον, *τό* 'rope, cable'. Hom. (*Il.* 2. 135)+. ET.: Formation as for *σπαρτός* etc. 'Spanish broom'. ACCENT: See on *σπαρτός* etc. 'Spanish broom' above. U. FREQ.: 5.

φόρτος, **ὁ** 'load, freight, cargo'. Hom. (*Od.* 8. 163+)+. ET.: *φέρω* 'bear, carry'. ACCENT: Arc. 90. 23; Sch. *Il.* 24. 316a[1] (A); Eust. 1352. 17; *EM* 591. 29. R. O. FREQ.: 19.

χόρτος, **ὁ** 'enclosed place; farmyard; pasturage'. Hom. (*Il.* 11. 774+)+. ET.: Cognate with Lat. *hortus* 'garden', Oscan *húrz* 'grove', Welsh *garth* 'enclosure, garden', etc. Usually taken to be a *-το-* derivative on the root of Skt *hárati* 'bring, carry'; see Frisk (1960–72: ii. 1113–14). ACCENT: Arc. 90. 23; Sch. *Il.* 24. 316a[1] (A); Eust. 1352. 17. R. O. FREQ.: 17.

ναστός, **ὁ** 'well-kneaded cake'. Pherecrates (in Athenaeus 6. 268f = Pherecrates fr. 113. 5 K–A)+. ET.: *νάσσω* 'press, squeeze close'. Cf. the adjective *ναστός* 'close-pressed, firm'. F. FREQ.: 2.

παστός, **ὁ** 'bridal canopy or curtain; bridal chamber'. Posidippus (*P. Lit. Lond.* 60. 8, unaccented), Lucian (*DMort.* 28. 3)+. ET.: *πάσσω* 'sprinkle'; see Frisk (1960–72: ii. 478). ACCENT: Arc. 91. 6 (Lobeck's conjecture for *πλαστός*). F. FREQ.: 0.

σησ(τ)ός, **ἡ** 'the sifter' (a nickname). Herodicus (in Athenaeus 13. 591c). ET.: *σήθω* 'sift'. F. FREQ.: 0.

νόστος, **ὁ** 'return home'. Hom. (*Il.* 2. 155+)+. ET.: *νέομαι* 'go, come'. ACCENT: Arc. 91. 9. R. O. FREQ.: 121.

κωκῡτός, **ὁ** 'shrieking, wailing'. Hom. (*Il.* 22. 409+)+. ET.: *κωκύω* 'shriek, wail'. ACCENT: Arc. 94. 19–20. F. FREQ.: 13.

πλοῦτος, **ὁ** 'wealth, riches'. Hom. (*Il.* 1. 171+)+. ET.: Root of *πλέω* < **πλέϝω* 'flow'; see Frisk (1960–72: ii. 564). ACCENT: Arc. 89. 14–15. R. O. FREQ.: 453.

βρῡτός/**βρῦτος**, **ὁ** and **βρῡτόν**/**βρῦτον**, **τό** 'fermented liquor made from barley, beer'. Archilochus (in Athenaeus 10. 447b = Archilochus fr. 42. 1 West)+. ET.: Likely to be a Thracian loan word, built on the root of Latin *ferueō* 'boil, ferment'; see Frisk (1960–72: i. 273). ACCENT: Arc. (90. 18) prescribes final accentuation for '*βρυτός* (*ὁ βρύων* ["being full"])'. Schmidt ad loc. doubts *βρύων*. Printed texts usually have recessive accentuation, but Amigues prints *βρυτῷ* at Theophrastus, *HP* 4. 8. 12. U. FREQ.: 0.

φορυτός, **ὁ** 'whatever the wind carries along, rubbish'. Democritus (in e.g. Plutarch, *Moralia* 129a = Democritus fr. B 147 D–K)+. ET.: Built on the element *φορυ-* of *φορῦνομαι* 'become mixed, become stained'; see Frisk (1960–72: ii. 1037). ACCENT: Arc. 94. 17 (but citing *φορυτός* as a word of three genders). F. FREQ.: 2.

φυτόν, **τό** 'plant'. Hom. (*Il.* 14. 123+)+. ET.: *φύω* 'bring forth, produce'. Cf. the adjective *φυτός* 'naturally formed'. ACCENT: Arc. 142. 10. F. FREQ.: 122.

ἀμυλιδωτόν, **τό** *kind of tunic*. Hermippus (in Photius *α* 1290 Theodoridis = Hermippus fr. 33 K–A). ET.: Derivative of *ἀμύλιον* 'starch'; see Frisk (1960–72: i. 97). F. FREQ.: 0.

λεπιδωτός, ***ὁ*** *Nile fish with large scales*. Herodotus (2. 72. 1)+. ET.: *λέπος*, *τό* 'rind, husk, scale'. Cf. the adjective *λεπιδωτός* 'scaly'. F. FREQ.: 1.

μισθωτός, ***ὁ*** 'hireling, hired servant'. Herodotus (1. 61. 4)+. ET.: *μισθόω* 'let out for hire'. Cf. the adjective *μισθωτός* 'hired'. ACCENT: Sch. Dem. 18. 104a, b, c relate a story that Demosthenes (18. 52) pronounced the word *μίσθωτος*, with recessive accent, when asking the jurors whether Aeschines was a *μισθωτός* of Alexander. On being corrected by the crowd, Demosthenes took their utterance '*μισθωτός*' as a positive answer to his question. Whether or not true, the story clearly presupposes that *μισθωτός* was the correct accentuation. F. FREQ.: 26.

κροκωτός, ***ὁ*** 'saffron-coloured robe'. Aristophanes (*Th.* 138+)+. ET.: *κρόκος*, *ὁ* 'saffron'. Cf. the adjective *κροκωτός* 'saffron-dyed'. ACCENT: Lentz (1867–70: i. 221. 18) takes the adjective *κροκωτός* to be Herodianic. Steph. Byz. (227. 11), whom he cites as evidence, does not, however, discuss the accent. F. FREQ.: 8.

γνωτός, ***ὁ*** 'kinsman'. Hom. (*Il.* 3. 174+)+. ET.: Probably derived from *γιγνώσκω* 'come to know, perceive', like the adjective *γνωτός* 'perceived, understood, known' (see App. 2.1 s.v.). Connection with *γίγνομαι* 'become' has also been suggested (see e.g. Frisk (1960–72: i. 307)), but seems phonologically impossible unless one assumes, with Chantraine (1968–80: 222–3), that the root **ĝen(H₁)-* of *γίγνομαι* had a variant **ĝneH₃-*, responsible for *γνωτός* 'kinsman'. Cf. Risch (1974: 21 n. 19). ACCENT: (Final accentuation is prescribed for the adjective *γνωτός* at Hrd. *μον.* 943. 31 and is implicit at Theognost. 74. 19.) F. FREQ.: 7.

κοντωτόν, ***τό*** 'punt'. Diod. Sic. (19. 12. 5+)+. ET.: *κοντός*, *ὁ* 'pole'. F. FREQ.: 0.

καρυωτός, ***ὁ*** 'date palm, date'. Strabo (17. 1. 15+)+. ET.: *κάρυον* 'nut'; see Frisk (1960–72: i. 794). F. FREQ.: 0.

Examples of excluded words: *ἀλοατός* (only attested at Xenophon, *Oec.* 18. 5, with plausible *v.l. ἁλοητός*); *ἀφυσγετός*/*ἀφύσγετος* (etymology unclear); *δειπνηστός*/*δείπνηστος* and variant *δειπνητός*/*δείπνητος* (likely to be a compound; see Frisk (1960–72: i. 358)); *δορπηστός* (likely to be a compound, like *δειπνηστός*; cf. Frisk (1960–72: i. 411)); *θρεπτός* (not actually attested as m. noun, though its use by Lysias is implied by Pollux 7. 17).

APPENDIX 3

Data for Chapter 8

3.1 Adjectives with suffix *-νο-*

The following abbreviations are used to encode information at the end of each entry: F = finally accented; R = recessive; I = intermediate accentuation; U = uncertain or variable accentuation, i.e. both final and recessive accentuation are attested and no decision could be made between them. Where more than one accent is attested but some decision could be reached, this decision has been explained in the note and the word has been classified as either F or R.

στεγανός, *ή*, *όν* 'covering so as to keep out water, water-tight; enclosing; closely covered'. Aeschylus (*A.* 358)+. ET.: *στέγω* 'cover closely'. ACCENT: Sch. *Il.* 14. 172a[1] (A). F.

σφριγανός, *ή*, *όν* 'plump, fresh'. Hippocrates (in Tim. *Lex.* 407. 4)+. ET.: *σφριγάω* 'be full to bursting, be plump'. F.

δᾱνός, *ή*, *όν* 'parched'. Hom. (*Od.* 15. 322)+. ET.: From **δαϝεσ-νός* (Frisk 1960–72: i. 342, s.v. *δαίω*). Cf. *δάος*, *τό* 'firebrand, torch'. ACCENT: Hrd. *διχρ.* 13. 34. F.

ἐδανός, *ή*, *όν* 'edible'. Aeschylus (*A.* 1408+). ET.: *ἔδω* 'eat'. ACCENT: A finally accented *ἐδανός* is given by the MS reading at Hrd. *μον.* 912. 15, emended by Lehrs to *ἑδανός*. The epithet of oil (see the next word below) may well be intended. On the hesitation in the grammatical tradition between rough and smooth breathing for *ἑδανός epithet of oil*, see Lejeune (1963: 82). F.

ἑδανός (or ***ἐδανός***) *epithet of oil*. Hom. (*Il.* 14. 172). ET.: Lejeune (1963) connects to the pronoun *ἕ* < **s̥ue*; cf. Risch (1974: 101). West (2001: 122–3) now derives from the IE root **u̯ed[h]-* of *ἔεδνα*/*ἕδνα*, *τά* 'bride-price, wedding gifts', NE *wed*, with *-δ-* for expected *-θ-* by analogy with the related noun *ἔεδνα*/*ἕδνα* (with loss of aspiration here next to a nasal); he takes the word to mean 'suitable for the wedding day'. For older views, also involving a suffix *-(α)νο-*, see West (2001: 122–3); Solmsen (1901: 283–5). ACCENT: Sch. *Il.* 14. 172a[1] (A). On Hrd. *μον.* 912. 15, see s.v. *ἐδανός* 'edible' above. F.

ῥῑγεδανός, *ή*, *όν* 'making one shudder'. Hom. (*Il.* 19. 325)+. ET.: Cf. *ῥῖγος*, *τό* 'frost, cold'; *ῥῑγίων* 'more horrible'; *ῥῖγιστος* 'most horrible', *ῥῑγέω* 'shudder, bristle with fear' (Risch 1974: 106). ACCENT: Arc. 73. 16. F.

λησεδανός, **ή**, **όν** 'causing forgetfulness'. Lucian (*Philops.* 39+). ET.: λήθη 'forgetting, forgetfulness'. ACCENT: Sch. *Il.* 1. 293b (A). F.

πευκεδανός, **ή**, **όν** 'sharp, piercing'. Hom. (*Il.* 10. 8)+. ET.: Cf. ἐχε-πευκής 'sharp, piercing'; περι-πευκής 'very sharp, very painful'; πύκα 'thickly, solidly'; πυκινός 'close, compact', πυκνός 'close, compact', πευκάλιμος (meaning obscure): Risch (1974: 106). ACCENT: Implied by Sch. *Il.* 1. 293b (A); πυκὶναι at *Il.* 5. 93 on *P. Oxy.* ii. 223, col. 4 (3rd cent. AD). F.

πεδανός, **ή**, **όν** 'low-growing, short; light'. Ion (in Hesychius π 1181 Schmidt = Ion fr. 4 S–K); Nicander (*Ther.* 226+)+. ET.: πέδον 'ground, earth'. ACCENT: Hrd. μον. 912. 15. F.

ἠπεδανός, **ή**, **όν** 'weak'. Hom. (*Il.* 8. 104+)+. ET.: Adjective in -εδανός (cf. e.g. ῥῖγεδανός 'making one shudder', above); etymology disputed (see Frisk 1960–72: i. 639–40). F.

σφεδανός, **ή**, **όν** 'vehement, violent'. Nicander (*Ther.* 642)+; n. sg. attested as an adverb in Homer. ET.: σφοδρός 'vehement, violent'. However, the difference in root vocalism between σφεδανός and σφοδρός suggests that we should perhaps take seriously the suggestion of an old **r*/*n*-stem on this root; see Benveniste (1935: 20); Chantraine (1968–80: 1075). ACCENT: Hrd. μον. 912. 15; Sch. *Il.* 16. 372a (A^{int}). F.

ἰδανός, **ή**, **όν** 'fair, comely'. Callimachus (in Sch. *Il.* 14. 172a[1] (A) = Callimachus fr. 114. 9 Pf. (= *P. Oxy.* xix. 2208 fr. 3. 9; unaccented on the papyrus)). ET.: ἰδεῖν (aor. inf.) 'to see'. ACCENT: Hrd. μον. 912. 13–14; Sch. *Il.* 14. 172a[1] (A). F.

χλιδανός, **ή**, **όν** 'luxurious, delicate, voluptuous'. Aeschylus (*Pers.* 544)+. ET.: χλιδή 'delicacy, luxury'. F.

οὐτιδανός/**οὐτίδανος**, **η**, **ον** 'of no account, worthless'. Hom. (*Il.* 1. 231+) +. ET.: Formed to οὔτι or *οὔτιδ 'nothing'; see Risch (1974: 101). ACCENT: Disputed in antiquity: see Sch. *Il.* 1. 293b (A). Arc. 73. 15 prescribes final accentuation. U.

ῥοδανός 'wavering'. Hom. (*Il.* 18. 576, but Zenodotus read ῥαδαλόν). ET.: Cf. περιρρηδής 'sprawling'. On the choice between ῥοδανόν and ῥαδαλόν at *Il.* 18. 576, see West (2001: 133–5). ACCENT: Hrd. μον. 912. 15. F.

πιθανός, **ή**, **όν** 'persuasive, plausible'. Aeschylus (*A.* 485+)+. ET.: πείθω, aor. ἔπιθον 'persuade'. ACCENT: Arc. 73. 12, 73. 20; Hrd. μον. 912. 13; Sch. *Il.* 14. 172a[1] (A). F.

κάγκανος, **ον** 'dry'. Hom. (*Il.* 21. 364+)+. ET.: Lith. *keñkti* 'cause pain' (see Frisk 1960–72: i. 750; Fraenkel 1962: 240). R.

Also 60 further post-Homeric finally accented -*νο*- adjectives.

πέπανος/**πεπανός**, **ον** 'ripe, mild'. Artemidorus Daldianus (1. 73. 1, 2. 25. 3)+. ET.: πέπων 'ripe, mild'. ACCENT: Pack prints πέπανα at Artemidorus Daldianus 1. 73. 1, πεπανὸν at 2. 25. 3. U.

ὀρφανός, (**ή**), **όν** 'without parents, fatherless'. Hom. (*Od.* 20. 68)+. ET.: Based on the form *ὀρφος cognate with Lat. *orbus* 'bereaved, bereft',

Arm. *orb* 'orphan', and preserved in Hesychius' glosses *ὀρφοβόται* 'guardians of orphans' (Hesychius *ο* 1361 Latte), *ὀρφοβοτία* 'guardianship' (Hesychius *ο* 1362 Latte); cf. *ὤρφωσεν* 'orphaned' (Hesychius *ω* 388 Schmidt; on the text see Schmidt ad loc.), aorist of a denominative verb **ὀρφόω*: Frisk (1960–72: ii. 431). Cf. App. 3.2 s.v. *ὀρφανός*, *ὁ*, 'orphan'. ACCENT: Arc. 73. 20; Hrd. *μον*. 912. 15. F.

ἁγνός, *ἡ*, *όν* 'holy'. Hom. (*Od.* 5. 123+)+. ET.: *ἄζομαι* 'stand in awe of'. ACCENT: Arc. 70. 11. F.

λάγνος, *η*, *ον* 'lecherous, lustful'. Critias (in Aelian, *VH* 10. 13 = Critias fr. B44 D–K)+. ET.: *λαγαίω* 'release'. Cf. App. 3.2 s.v. *λάγανον*, *τό* 'thin broad cake'. ACCENT: Arc. 70. 11; Sch. *Il.* 14. 351a (A). Schwyzer (1953: 489) suggests, without elaborating, that the recessive accent of *λάγνος* is due to the recessive accent of (some) substantivized words in *-νο-*. R.

ἀλαπαδνός (and **λαπαδνός**), *ἡ*, *όν* 'feeble'. Hom. (*Il.* 2. 675+)+. ET.: *ἀλαπάζω* 'exhaust'. ACCENT: Lentz (1867–70: i. 172. 23–4) includes *ἀλαπαδνός* in his reconstruction of Herodian's *Περὶ καθολικῆς προσῳδίας*, taking the word from Hrd. *διχρ*. 14. 29 (not from Hrd. *μον*., despite his reference), but Herodian does not mention the word's accent in the *Περὶ διχρόνων*. F.

κεδνός, *ἡ*, *όν* 'careful'. Hom. (*Il.* 17. 28+)+. ET.: Cf. *κήδομαι* 'care for', *κῆδος*, *τό* 'care', *κήδιστος* 'most cared for'; see Risch (1974: 98–9). ACCENT: Arc. 70. 11. F.

μακεδνός, *ἡ*, *όν* 'tall, taper'. Hom. (*Od.* 7. 106)+. ET.: Cf. *μῆκος*, *τό* 'length'; *περι-μήκης* 'very tall or long'; *μακρός* 'long'; *μάσσων* 'greater'; *μήκιστος* 'greatest'; see Risch (1974: 106). F.

ψεδνός, *ἡ*, *όν* 'thin, spare, scanty'. Hom. (*Il.* 2. 219)+. ET.: Root of *ψῆν* (pres. inf.) 'rub, wipe'; see Frisk (1960–72: ii. 1131–2). F.

παιδνός, *ἡ*, *όν* 'of childish years, childish'. Hom. (*Od.* 21. 21+)+. ET.: Cf. *παῖς*, *ὁ/ἡ*, gen. *παιδός* 'child' < **pau̯-id-*. For the root **pau-* (< **peH₂u-*), cf. e.g. *παῦ-ρος* 'few', Lat. *pau-per* 'poor'; see Frisk (1960–72: ii. 463). F.

σμερδνός, *ἡ*, *όν* 'fearful'. Hom. (*Il.* 5. 742+)+. ET.: Cf. OHG *smerzan* 'be in pain', *σμερδαλέος* 'fearful'; see Risch (1974: 98–9). F.

ὀλοφυδνός, *ἡ*, *όν* 'lamenting'. Hom. (*Il.* 5. 683+). ET.: *ὀλοφύ̆ρομαι* 'lament'; see Risch (1974: 98). ACCENT: Lentz (1867–70: i. 172. 24) includes *ὀλοφυδνός* in his reconstruction of Herodian's *Περὶ καθολικῆς προσῳδίας*, taking the word from Hrd. *διχρ*. 14. 29 (not from Hrd. *μον*., despite his reference), but Herodian does not mention the word's accent in the *Περὶ διχρόνων*. F.

πετεηνός (and **πετηνός**, **πετεινός**, **πετεεινός**), *ἡ*, *όν* 'able to fly'. Hom. (*Il.* 2. 459+)+. ET.: *πετεηνός* and *πετεεινός* are lengthened forms of *πετηνός*, *πετεινός* (Risch 1974: 100). Cf. *ὑψι-πέτης* 'high-flying', *διειπετής* 'fallen from heaven', attesting an *s*-stem form (as second member)

that could have been the base for *πετεινός* < **πετεσ-νός* (see Risch 1974: 100). ACCENT: Implied by Theognost. 68. 1. F.

ἀκμηνός/ἄκμηνος, **η, ον** 'full-grown'. Hom. (*Od.* 23. 191)+. ET.: *ἀκμή* 'point, edge', *ἀκή* 'point', etc. ACCENT: Disputed in antiquity. According to Eust. 1944. 38–40, Aristarchus gave *ἀκμηνός* 'full-grown' a final accent but accented *ἄκμηνος* 'fasting' recessively, while others accented *ἀκμηνος* recessively in both meanings. Cf. Sch. *Od.* 23. 191 (V) and (somewhat differently) *EM* 49. 43. Von der Muehll on *Od.* 23. 191 records that the MSS unanimously contradict Aristarchus' doctrine in reading *ἄκμηνος*. U.

ἀδινός, **ή**, **όν** 'close, thick, crowded'. Hom. (*Il.* 16. 481+)+. ET.: Cf. *ἁδρός* 'thick, stout, bulky', *ἄδην/ᾆδην* (adverbial acc.) 'to one's fill'. ACCENT: Sch. Opp. *Hal.* 2. 363; Choer. *Orth.* 180. 4; *EM* 17. 34; *Ep. Hom. alph. α* 19. F.

ῥαδινός, **ή**, **όν** 'slender'. Hom. (*Il.* 23. 583)+. ET.: Root of *περι-ρρηδής* 'sprawling': Risch (1974: 99). ACCENT: Choer. *Orth.* 180. 4. F.

φαεινός (and contracted **φᾱνός**), **ή**, **όν** 'shining, radiant'. Hom. (*Il.* 3. 247+) +. ET.: *φάος* < **φάϝος*, *τό* 'light'. Cf. App. 3.2 s.v. *φᾱνός*, *ὁ* 'torch'. ACCENT: Arc. 75. 7; Choer. *Orth.* 179. 25, 273. 30; *Ep. Hom. alph. φ* 46. Arc. 72. 3 prescribes final accentuation for the form *φᾱνός*, making no distinction between the adjective and the noun *φᾱνός* 'torch'. F.

ἀλεγεινός, **ή**, **όν** 'causing pain'. Hom. (*Il.* 2. 787+)+. ET.: Risch (1974: 100) assumes an old *s*-stem **ἄλεγος*, semantically identical to *ἄλγος*, *τό* 'pain', and compares *δυσηλεγής* 'bringing bitter grief'. ACCENT: *EM* 58. 55. F.

δεινός, **ή**, **όν** 'fearful'. Hom. (*Il.* 1. 49+)+. ET.: *δείδω* < **de-dṵoi̯-a* (old perf.) 'fear', aor. *ἔδεισα* < **e-dṵei̯-s-m̥*. ACCENT: Arc. 72. 13–14; Theognost. 67. 28; Choer. *Orth.* 190. 27. F.

κελαδεινός, **ή**, **όν** 'noisy'. Hom. (*Il.* 16. 183+)+. ET.: No *s*-stem attested. The word was probably formed directly to *κέλαδος*, *ὁ* 'din', on the model of other adjectives in *-ειvo-* (Frisk 1960–72: i. 813). ACCENT: Choer. *Orth.* 232. 29. F.

ἐλεεινός, **ή**, **όν** 'pitied, piteous'. Hom. (*Il.* 21. 273+)+. ET.: Cf. *νηλεής* 'pitiless'. The *s*-stem simplex *ἔλεος*, *τό* 'pity' is not attested until the Hellenistic period, Homeric *ἔλεος* 'pity' being a masculine *o*-stem. The adjective *ἐλεεινός* is either derived from an *s*-stem form or analogical on *ἀλεγεινός* 'causing pain, grievous' (Chantraine 1968–80: 336). ACCENT: Theognost. 67. 27; Choer. *Orth.* 179. 27; *EM* 58. 51. F.

αἰπεινός, **ή**, **όν** 'high'. Hom. (*Il.* 2. 573+)+. ET.: *αἶπος*, *τό* 'height'. ACCENT: Choer. *Orth.* 179. 27–8. F.

ἐρατεινός, **ή**, **όν** 'lovely'. Hom. (*Il.* 2. 532+)+. ET.: No *s*-stem attested. The word was probably formed directly to a related word such as *ἐρατός* 'lovely'; see pp. 197–8. ACCENT: Choer. *Orth.* 210. 19. F.

φυζακινός, **ή**, **όν** 'flying, runaway, shy'. Hom. (*Il.* 13. 102). Et.: φύζα 'headlong flight'. For an attempt to explain the combination of suffixes, see Bechtel (1914: 330). Accent: Sch. *Il.* 13. 102a (A), Choer. *Orth.* 180. 4; Theognost. 67. 30; *Ep. Hom. alph.* φ 46. F.

πυκινός, **ή**, **όν** 'close, compact'. Hom. (*Il.* 2. 55+)+. Et.: Cf. πυκι-μηδής 'shrewd', πύκα 'solidly', περι-πευκής 'very sharp', ἐχε-πευκής 'sharp'; see Risch (1974: 99). Accent: *Ep. Ps.* 131. 32, 139. 10; Sch. Opp. *Hal.* 2. 363; Choer. *Orth.* 180. 4; *EM* 17. 34, 58. 54; *Ep. Hom. alph.* α 19. F.

εἰαρινός (and **ἠαρινός**, **ἠρινός**, **ἐαρινός**), **ή**, **όν** 'of spring'. Hom. (*Il.* 2. 89+)+. Et.: ἔαρ, gen. ἔαρος 'spring'. Accent: Arc. 220. 15; Sch. *Il.* 13. 102a (A); Theognost. 67. 25; Choer. *Orth.* 180. 3–4; Hrd. διχρ. 14. 37; Phryn., *PS* 114. 16. F.

ὀπωρῑνός/**ὀπωρινός**, **ή**, **όν** 'of late summer'. Hom. (*Il.* 5. 5+)+. Et.: ὀπώρᾱ 'late summer'. The Homeric form ὀπωρῑνός may be metrically lengthened, or the long *-ī-* could be due to compensatory lengthening if the pre-form has a variant suffix **-inu̯o-* seen also in Mycenaean *pe-ru-si-nu-zwo* 'of last year'; see Ventris and Chadwick (1973: 571, s.v.); Aura Jorro (1985–93: ii. 113–14, s.v.), with bibliography. Accent: Hrd. διχρ. 15. 1; Choer. *Orth.* 243. 2. F.

πυκνός, **ή**, **όν** 'compact'. Hom. (*Il.* 14. 349+)+. Et.: Cf. πυκι-μηδής 'shrewd', πύκα 'solidly', περι-πευκής 'very sharp', ἐχε-πευκής 'sharp'. Accent: Arc. 70. 16; Sch. *Il.* 5. 292 (A); *Et. Gen.* quoted by Erbse on Sch. *Il.* 5. 292; Sch. *Il.* 14. 351a (A); *EM* 591. 31; presupposed by Io. Al. 29. 1–2. F.

ἐρεμνός, **ή**, **όν** 'dark'. Hom. (*Il.* 4. 167+)+. Et.: ἔρεβος, τό 'place of nether darkness'. Accent: Arc. 71. 14. F.

γυμνός, **ή**, **όν** 'naked'. Hom. (*Il.* 16. 815+)+. Et.: The history of this form is unclear. Related forms include Lat. *nūdus* 'naked', NHG *nackt* 'naked', Lith. *núogas* 'naked'; see Frisk (1960–72: i. 333). Nussbaum (1976: 92–3) argues that in Gk the suffix was originally *-mo-* rather than *-no-*. Accent: Arc. 71. 9; *Et. Gen.* quoted by Erbse on Sch. *Il.* 5. 292. F.

ἐραννός, **ή**, **όν** 'lovely'. Hom. (*Il.* 9. 531+)+. Et.: Cf. ἔρως, ὁ 'love', probably an *s*-stem in origin (so Frisk 1960–72: i. 547). Accent: Arc. 71. 19. F.

ἐρεβεννός, **ή**, **όν** 'dark'. Hom. (*Il.* 5. 659+)+. Et.: From *ἐρεβεσ-νός. Cf. ἔρεβος, τό 'place of nether darkness'. Accent: Arc. 71. 20. F.

ἀργεννός, **ή**, **όν** 'white'. Hom. (*Il.* 3. 141+)+. Et.: Cf. ἐν-αργής 'visible', ἀργι-όδους 'white-toothed'; ἀργός 'white, swift' = Skt *ṛjrá-* 'swift' < **H₂r̥ĝrós*. Accent: Arc. 71. 19. F.

στιλπνός, **ή**, **όν** 'glittering, glistening'. Hom. (*Il.* 14. 351)+. Et.: στίλβω 'glitter, gleam'. Accent: Sch. *Il.* 14. 351a (A). F.

τερπνός, ***ή***, ***όν*** 'delightful, pleasant'. Hom. (*v.l.* at *Od.* 8. 45), Tyrtaeus (in Stobaeus 4. 10. 6 = Tyrtaeus fr. 12. 38 West)+. ET.: *τέρπω* 'delight'. ACCENT: Arc. 70. 16. F.

χαῦνος, (***η***), ***ον*** 'porous, spongy, loose; frivolous'. Solon (in e.g. Plutarch, *Solon* 16. 3 = Solon fr. 34. 4 West+)+. ET.: *χάος* < **χάϝος*, *τό* 'chaos; space'. ACCENT: Arc. 73. 6. Frisk (1960–72: ii. 1073) comments on the 'auffallender Barytonese'. R.

μόρφνος *epithet of an eagle*. Hom. (*Il.* 24. 316, if an adjective there)+. ET.: At *Il.* 24. 316 and Hesiod, *Scutum* 134, *μόρφνος* could be taken as either an adjective or a noun in apposition to another noun. The word is thought to be a colour term in origin, perhaps related to Lith. *márgas* 'colourful'; see Frisk (1960–72: ii. 258); Risch (1974: 98). I have also listed *μόρφνος* as a noun, since the word was taken to be substantival at least in the 4th and 3rd centuries BC; see App. 3.2 s.v. *μόρφνος*, *ὁ kind of eagle*. ACCENT: Sch. *Il.* 24. 316a[1] (A), Eust. 1352. 5, and *EM* 591. 25 prescribe recessive accentuation. Arc. 70. 19 specifically treats *μόρφνος* as a recessive adjective. Some MSS have *μορφνὸν* at *Il.* 24. 316 (see West ad loc.), but the textual tradition as a whole favours *μόρφνον* in agreement with the grammatical tradition. R.

λίχνος, (***η***), ***ον*** 'gluttonous'. Euripides (*Hipp.* 913+)+. ET.: *λείχω* 'lick up' (see Frisk 1960–72: ii. 102). Schwyzer (1953: 489) suggests that the recessive accent is due to that of (some) substantivized words in *-νο-* (cf. *λάγνος* above). ACCENT: Arc. 70. 17, Sch. *Il.* 14. 351a (A). R.

γρῶνος, ***η***, ***ον*** 'eaten out'. Lycophron (*Al.* 20+)+. ET.: From **γρωσ-νος*; cf. *γράω* < **gr̥s-ō* (?) 'gnaw, eat'. See Frisk (1960–72: i. 326, 330). R.

φῶνος, ***ον*** 'loud-voiced'. Eupolis (in Sch. Ar. *Av.* 42a = Eupolis fr. 309 K–A); cf. Theognost. 66. 17 (*φῶνος ὁ μεγαλόφωνος*). ET.: *φημί* 'say'; cf. *φωνή* 'speech, voice', *μεγαλόφωνος* 'loud-voiced'. ACCENT: Lentz (1867–70: i. 177. 13) includes *φῶνος* in his reconstruction of Herodian's *Περὶ καθολικῆς προσῳδίας* on the evidence of Theognost. 66. 17, but Theognostus does not discuss the accent. R.

Examples of excluded words: *ἀγανός* (etymology unclear: Frisk (1960–72: i. 7)); *ἄγανος* 'broken' (ghost word: see LSJ Revised Supplement, s.v.).

3.2 Nouns with suffix *-νο-*

The following abbreviations are used to encode information at the end of each entry: (*a*) F = finally accented; R = recessive; I = intermediate accentuation; U = uncertain or variable accentuation, i.e. more than one accentuation pattern is attested and no decision could be made between them. Where more than one accentuation is attested but some decision could be reached, this decision has been explained in the note and the word has been classified as F, R, or I. (*b*) FREQ.: the figure given

after 'FREQ.' is the number of occurrences of the word in the Perseus Digital Library corpus (Crane 1999), which contained *c.*3,400,000 words at the time of use (January 1999). This number is used as a frequency index.

τρίβανον, ***τό*** *measure of capacity*. (Ps.-) Galen (19. 774. 1+)+. ET.: *τρίβω* 'rub, wear away, spend'. R. FREQ.: 0.

λάγανον, ***τό*** 'thin broad cake'. Diocles Medicus (in Athenaeus 3. 110b = Diocles Medicus fr. 116 Wellmann)+. ET.: Formed on the root of *λαγαίω* 'release' (although not directly a derivative of this verb), according to Frisk (1960–72: ii. 68). Frisk, following Benveniste (1935: 18), suggests an old **r/n*-stem **λάγαρ/ν-*. However, there is little evidence for an **r/n*-stem beyond the existence of *λαγαρός* 'hollow, thin', a derivative in *-ρο-* beside the *-νο-* adjective *λάγνος* 'lecherous, lustful' and our noun *λάγανον*. These forms cannot now be considered sufficient evidence for an **r/n*-stem (cf. Introduction n. 1). R. FREQ.: 0.

σπάργανον, ***τό*** 'swathing band'. *Homeric Hymns* (4. 151+)+. ET.: *σπάρξαν* (3rd pl. aor. at *Homeric Hymns* 3. 121) 'they swathed'. R. FREQ.: 25.

ὄργανον, ***τό*** 'instrument, implement'. Pindar (in Athenaeus 5. 181b = Pindar fr. 107b. 2 S–M)+. ET.: Root of *ἔργον* 'work', *ἔοργα* (1st sg. perf.) 'have done', etc.; see Frisk (1960–72: ii. 411). On the root vocalism see Hamp (1985: 103). R. FREQ.: 179.

φρῦγανον, ***τό*** 'dry stick, firewood'. Herodotus (4. 69. 1+)+. ET.: *φρῦγω* 'roast, parch'. R. FREQ.: 13.

φώγανον, ***τό*** 'vessel for roasting barley'. Pollux (10. 109). ET.: *φώγω* 'roast'. ACCENT: The only attestation of the word is in the dative singular *φωγάνῳ*, which is ambiguous between recessive and intermediate accentuation. Given the total lack of clear cases of intermediate accentuation among nouns in *-ανο-*, however, we may take *φώγανον* to be recessive. R. FREQ.: 0.

ἐρευθέδανον, ***τό*** and ***ἐρυθρόδανον***, ***τό*** 'madder' (a plant). Herodotus (4. 189. 2)+. ET.: *ἐρυθρός* 'red', *ἐρεύθω* 'make red'. R. FREQ.: 1.

πευκέδανον, ***τό*** and ***πευκέδανος***, ***ἡ*** 'sulfur-wort'. Theophrastus (*HP* 9. 14. 1)+. ET.: *πεύκη* 'pine', *περι-πευκής* 'very sharp'. Cf. the adjective *πευκεδανός* 'sharp, piercing', attested from Homer on, and see Risch (1974: 106). R. FREQ.: 0.

γλαυκιδανόν/γλαυκίδανον, ***τό*** *an eye-salve*. Galen (12. 746. 10). ET.: Derivative on the root of *γλαυκός* 'gleaming'. ACCENT: Kühn prints *γλαυκιδανόν* at Galen 12. 746. 10; LSJ print *-ίδανον*. U. FREQ.: 0.

μυρτίδανον, ***τό*** *myrtle-like plant*. Hippocrates (*Mul.* 1. 34 (viii. 82. 6 Littré)+)+. ET.: *μύρτος*, *ἡ* 'myrtle', *μυρτίς*, gen. *-ίδος* 'myrtle-berry'. R. FREQ.: 0.

νωτιδανός, ***ὁ*** *kind of dog-fish or small shark*. Aristotle (in Athenaeus 7. 294d = Aristotle fr. 310. 4 Rose). ET.: *νῶτον* 'back'. F. FREQ.: 0.

πύρδανον, ***τό*** 'small wood for burning'. *Lyrica adespota* (*P. Oxy*. iv. 661. 19 = *Lyrica adespota* fr. 31. 19 Powell). ET.: *πῦρ*, gen. *πυρός* 'fire'. ACCENT: Accented *πυρδάνωι* at *P. Oxy*. iv. 661. 19 (late 2nd cent. AD). R. FREQ.: 0.

ἑανός and ***εἱανός***, ***ὁ*** 'fine robe'. Hom. (*Il*. 3. 385+)+. ET.: Root of *ἕννῡμι* 'put clothes on (another)' < **u̯es-mī-mi*. ACCENT: Hrd. *μον*. 912. 21 (implicit). F. FREQ.: 7.

πλάθανον, ***τό*** *dish or mould in which bread, cakes etc. were baked*. Theocritus (15. 115)+. ET.: *πλάσσω* 'mould' < **πλάθ-i̯ω*. R. FREQ.: 0.

ἄκανος, ***ὁ*** *kind of thistle*. Theophrastus (*HP* 1. 10. 6+). ET.: Root of *ἀκή* 'point'; see Frisk (1960–72: i. 51). R. FREQ.: 0.

δελκανός, ***ὁ*** *kind of fish*. Euthydemus (in Athenaeus 3. 118b). ET.: Formed from the river name *Δέλκων*, gen. *Δέλκωνος*. F. FREQ.: 0.

δόκανα, ***τά*** 'two upright parallel bars joined towards each end (symbols of the Dioscouroi at Sparta)'. Plutarch (*Moralia* 478a). ET.: *δοκός*, *ἡ*(/*ὁ*) 'bearing-beam, main beam'. R. FREQ.: 0.

πλόκανον, ***τό*** 'plaited work, basketwork; wicker winnowing-fan'. Plato (*Ti*. 52e+)+. ET.: *πλέκω* 'plait or make by plaiting', *πλόκος*, *ὁ* 'lock or braid of hair'. R. FREQ.: 3.

χάσκανον, ***τό*** 'broadleaved burweed'. Dioscorides (4. 136. 1). ET.: Related at least during the course of its history to *χάσκω* 'yawn'; see Strömberg (1940: 152). R. FREQ.: 0.

τραύξανα, ***τά*** 'dry chips, waste that falls from the manger'. Pherecrates (in e.g. *Suda* τ 916 = Pherecrates fr. 275 K–A)+. ET.: A contamination between *τρώξανον* 'twig' and *θραύω* 'break in pieces'; see Frisk (1960–72: ii. 919) and cf. Schwyzer (1953: 346). R. FREQ.: 0.

τρώξανα, ***τά*** 'dry twigs'. Theophrastus (*CP* 3. 2. 2). ET.: *τρώγω* 'gnaw, nibble, munch'. R. FREQ.: 0.

ξόανον, ***τό*** 'image carved in wood; image, statue; musical instrument'. Sophocles (in Athenaeus 14. 637a = Sophocles fr. 238. 2 Radt)+. ET.: *ξέω* 'shave or plane timber, carve wood'. R. FREQ.: 128.

χόανος, ***ὁ*** 'melting-pot'. Hom. (*Il*. 18. 470)+. ET.: *χέω* 'pour'. ACCENT: Arc. 73. 11. R. FREQ.: 2.

σκέπανον, ***τό*** 'covering'. *Greek Anthology* (6. 298. 4). ET.: *σκέπω* 'cover, shelter'. R. FREQ.: 0.

σκέπανος, ***ὁ*** *a fish, perhaps a kind of tunny*. Oppian (*H*. 1. 106+). ET.: Apparently from *σκέπω* 'cover, shelter'. R. FREQ.: 0.

δρέπανον, ***τό*** 'sickle; pruning-knife'. Hom. (*Od*. 18. 368)+. ET.: *δρέπω* 'pluck'. R. FREQ.: 25.

τύμπανον (and ***τύπανον***), ***τό*** 'kettle-drum'. *Homeric Hymns* (14. 3)+. ET.: Derived from *τύπτω* < **τύπ-i̯ω* 'beat, strike'. The *-μ-* of the form *τύμπανον* may be analogical or inherited. Alternatively, the word may

be a borrowing, with the form *τύπανον* due to popular etymology with *τύπτω*; see Frisk (1960–72: ii. 945). R. FREQ.: 21.

κόπανον, ***τό*** 'chopper'. Aeschylus (*Ch.* 860). ET.: *κόπτω* < **κόπ-ɹ̯ω* 'cut, strike'. ACCENT: The only occurrence of the word, at Aeschylus, *Ch.* 860, is in the genitive plural *κοπάνων*. This form is ambiguous between recessive and intermediate accentuation. Given the total lack of clear cases of intermediate accentuation among nouns in *-ανο-*, however, we may take *κόπανον* to be recessive. R. FREQ.: 1.

πόπανον, ***τό*** 'round cake'. Aristophanes (*Pl.* 680+)+. ET.: *πέσσω* 'cook' < **pek^{w}-ɹ̯ō*. R. FREQ.: 5.

τρῡ́πανον, ***τό*** 'borer'. Hom. (*Od.* 9. 385)+. ET.: Root of *τρῡπάω* 'bore'. R. FREQ.: 7.

ἕδρανον, ***τό*** 'seat, abode'. Hesiod (in Strabo 7. 7. 10 = Hesiod fr. 319 M–W)+. ET.: *ἕδρᾱ* 'seat'. R. FREQ.: 10.

κόπρανα, ***τά*** 'excrements'. Hippocrates (*Epid.* 1. 26 *β*' (ii. 686. 16 Littré)+). ET.: *κόπρος*, *ἡ* 'excrement'. R. FREQ.: 0.

οὐρανός, ***ὁ*** 'heaven, sky'. Hom. (*Il.* 1. 317+)+. ET.: Formed on the root of Skt *varṣá-* n./m. 'rain', *várṣati* 'rain'; possibly related most immediately to the iterative preserved in Gk *οὐρέω* < **u̯orséɹ̯ō* 'urinate'. See Frisk (1960–72: ii. 446–7). ACCENT: Arc. 73. 11; Hrd. *μον.* 912. 16 (implicit); *Ep. Ps.* 79. 11. F. FREQ.: 488.

πτίσανον, ***τό*** 'peeled barley'. Nicander (*Ther.* 590). ET.: *πτίσσω* 'winnow grain'. R. FREQ.: 0.

εὖσανα, ***τά*** 'marks burnt in'. Pollux (6. 91). ET.: *εὔω* < **eusō*. R. FREQ.: 0.

φᾱνός, ***ὁ*** 'torch'. Xenophon (*Lac.* 5. 7)+. ET.: Contracted from *φαεινός* < *φαϝεσ-νός*, a derivative of *φάος* < **φάϝος*, *τό*. Cf. App. 3.1 s.v. *φαεινός* (and contracted *φᾱνός*) 'shining, radiant'. ACCENT: Arc. 72. 3 prescribes final accentuation for the form *φᾱνός*, making no distinction between the noun and the adjective. F. FREQ.: 2.

ῥάφανος, ***ἡ*** 'cabbage'. Aristophanes (in Stobaeus 4. 14. 2 = Aristophanes fr. 111. 4 K–A)+. ET.: Related to *ῥάφυς* 'French turnip'. R. FREQ.: 0.

στέφανος, ***ὁ*** 'crown, wreath'. Hom. (*Il.* 13. 736)+. ET.: *στέφω* 'put round'. ACCENT: Arc. 73. 10; *Ep. Ps.* 79. 13. R. FREQ.: 361.

ὀρφανός, ***ὁ*** 'orphan'. Plato (*Lg.* 11. 926c+)+. ET.: See App. 3.1 s.v. *ὀρφανός* 'without parents, fatherless'. ACCENT: Arc. 73. 20 (quoting *ὀρφανός* as a word of three genders). F. FREQ.: 50.

γλύφανος, ***ὁ*** 'tool for carving, knife, chisel'. *Homeric Hymns* (4. 41)+. ET.: *γλύφω* 'carve'. R. FREQ.: 1.

κελῡ́φανον, ***τό*** 'sheath, case'. Lycophron (*Al.* 89)+. ET.: *κέλῡφος*, *τό* 'sheath, case'. ACCENT: The only certain occurrence of the word, at Lycophron, *Al.* 89, is in the genitive singular *κελῡφάνου*. This form is ambiguous between recessive and intermediate accentuation. Given the complete lack of clear cases of intermediate accentuation among nouns in *-ανο-*, however, we may take *κελῡ́φανον* to be recessive. R. FREQ.: 0.

λιχανός/λίχανος, **ἡ** 'string struck with the forefinger; note made by the string struck with the forefinger'. Aristotle (*Pr.* 919[a]17)+. ET.: *λείχω* 'lick'. Cf. the adjective *λιχανός* 'licking'. ACCENT: Both final and recessive accentuation occur in printed texts; cf. Chandler (1881: 83). U. FREQ.: 0.

ὄχανον, **τό** 'shield-holder'. Anacreon (in e.g. Strabo 14. 2. 27 = Anacreon fr. 56. 2 Page)+. ET.: *ἔχω* 'have, hold'. R. FREQ.: 6.

λεπύχανον, **τό** 'coat (of an onion, etc.), rind'. Theopompus (in Eust. 1863. 51 = Theopompus fr. 34. 3 K–A)+. ET.: Related to *λεπυρός* 'in a husk, peel, rind' and *λέπῡρον* 'rind, shell, husk'. Perhaps influenced by *λάχανον* 'garden herb' (Frisk 1960–72: ii. 106). R. FREQ.: 0.

λείψανον, **τό** 'piece left, remnant'. Sophocles (*El.* 1113)+. ET.: *λείπω* 'leave; leave behind'. R. FREQ.: 25.

ὄψανον, **τό** 'vision, apparition'. Aeschylus (*Ch.* 534). ET.: *ὄψομαι*, suppletive future of *ὁράω* 'see'. R. FREQ.: 1.

λέπαδνον, **τό** 'yoke-strap'. Hom. (*Il.* 5. 730+)+. ET.: Likely to be connected to *λεπάς*, gen. *-άδος* 'limpet'; see Frisk (1960–72: ii. 104–5), who also raises an objection. R. FREQ.: 5.

ἔδνον, **τό** and Homeric **ἔεδνα**, **τά** 'bride-price, wedding gift; gift'. Hom. (*Il.* 16. 178+)+. ET.: Formed on the root of Lith. *vèsti* 'lead'. R. FREQ.: 25.

σίπυδνος, **ἡ** 'meal-tub'. Oracle (in Lucian, *Alex.* 25 *ad fin.*). ET.: *σιπύη* 'meal-tub'. R. FREQ.: 0.

τιθηνός, **ὁ** and **ἡ** 'foster-father, nurse'. Nicander (*Alex.* 31)+. ET.: Built on a reduplicated stem from the root of *θῆσθαι* (aor. inf. middle) 'suck; suckle'; see Frisk (1960–72: ii. 899). F. FREQ.: 0.

ἀγρηνόν, **τό** 'net, netlike woollen robe worn by soothsayers'. Pollux (4. 116). ET.: *ἄγρᾱ* 'the hunt; prey', *ἀγρέω* 'take, seize'. F. FREQ.: 0.

πετηνά, **τά**, **πετεινόν**, **τό**, and Homeric **πετεηνόν**, **τό** 'bird, winged creature'. Hom. (*Il.* 8. 247+)+. ET.: From **πετεσ-νό-*. Derived from an *s*-stem nominal form on the root of *πέτομαι* 'fly', preserved in the compounds *ὑψιπέτης* 'high-flying', *διειπετής* 'fallen from heaven'; see Risch (1974: 100). ACCENT: Final accentuation is implied for the adjective *πετηνός* 'able to fly' (see App. 3.1 s.v. *πετεηνός*) by Theognost. 68. 1. F. FREQ.: 10.

καρκίνος, **ὁ** 'crab'. Epicharmus (in Athenaeus 3. 91c = Epicharmus fr. 47. 1 K–A)+. ET.: Related to Latin *cancer* 'crab' < **kar-kro-*, with dissimilatory loss of the second *-r-* and the addition of a suffix *-ino-* (Frisk 1960–72: i. 789). ACCENT: Choer. *Orth.* 236. 17 (common noun and personal name *Καρκίνος* not distinguished). Cf. Arc. 74. 19. The latter passage is textually problematic but intermediate accentuation appears to be prescribed, with some hesitation as to the length of the *-ι-* (which, if it were long, would have a circumflex). See also Lentz (1867–70: i. 183. 8–11), with notes ad loc. Cf. Ch. 8 n. 11. For

the accentuation of the personal name *Καρκίνος*, see Sch. Ar. *Pax* 782b. I. FREQ.: 10.

ἑλινός/ἕλινος, **ὁ** 'vine, vine-tendril'. Nicander (*Alex.* 181)+. ET.: Root of *εἰλέω* 'wind, turn round'; see Frisk (1960–72: i. 495). ACCENT: Both final and recessive accentuation occur in printed texts. Gow and Scholfield print *ἑλίνοιο* at Nicander, *Alex.* 181; Gaisford prints *ἜΛΙΝΟΣ* at *EM* 330. 39. U. FREQ.: 0.

σπίνος, **ὁ** 'chaffinch; kind of stone'. Aristophanes (*Av.* 1079+)+. ET.: Related to *σπίζω* 'pipe, chirp', probably with influence from the adjective *σπινός* 'thin, lean' (Frisk 1960–72: ii. 766). ACCENT: *Ep. Hom. alph.* ρ 12. R. FREQ.: 2.

ῥῑνός, **ἡ/ὁ** 'skin'. Hom. (*Il.* 4. 447+)+. ET.: Frisk (1960–72: ii. 657–8) derives the word from a lost verb that would also lie behind *ῥῑ́νη* 'file, rasp' and OS *wrītan* 'tear, scratch, write'. ACCENT: *Ep. Hom. alph.* ρ 12. F. FREQ.: 31.

σειρίνα/σείρινα, **τά** 'light summer clothes'. Lycurgus (in Harpocration σ 2). ET.: *σείριος*, *ὁ* 'dog-star'. ACCENT: Keaney (on Harpocration σ 2) records both recessive and intermediately accented manuscript variants from various sources. U. FREQ.: 0.

τέκνον, **τό** 'child'. Hom. (*Il.* 1. 362+)+. ET.: *τίκτω* 'bring into the world, engender; beget', aor. *ἔτεκον*. R. FREQ.: OVER 500.

λίκνον, **τό** 'winnowing-fan'. Sophocles (in e.g. Plutarch, *Moralia* 99a = Sophocles fr. 844. 3 Radt)+. ET.: Frisk (1960–72: ii. 123) assumes an original **νίκνον*, with regressive dissimilation giving *λίκνον* and progressive dissimilation the form *νίκλον* found in Hesychius (*ν* 574 Latte) and glossed as *τὸ λίκνον*. This hypothesis allows a connection with Lith. *niekóti* 'winnow' (cf. Fraenkel 1962: 502). R. FREQ.: 7.

περκνός/πέρκνος, **ὁ** *kind of eagle*. Hom. (*Il.* 24. 316)+. ET.: *πέρκος*, *ὁ kind of hawk*, *πέρκη* 'perch'; see Frisk (1960–72: ii. 515). ACCENT: Disputed in antiquity. Aristarchus gave the word a recessive accent, but final accentuation was generally accepted. Sch. *Il.* 24. 316a[1] (A) and Eust. 1352. 18–22 report the dispute; Sch. *Il.* 24. 316a[2] (T) and *EM* 591. 31 simply prescribe final accentuation. U. FREQ.: 1.

κύκνος, **ὁ** 'swan'. Hom. (*Il.* 2. 460+)+. ET.: Likely to be connected to Skt *śuk-rá-* 'bright', *śócati* 'shine'; for bibliography on this and other suggestions, see Frisk (1960–72: ii. 45–6). ACCENT: Arc. 71. 1; Sch. *Il.* 18. 319a[1] (A). R. FREQ.: 35.

θάμνος, **ὁ** 'bush, shrub'. Hom. (*Il.* 11. 156+)+. ET.: *θαμέες* (nom. pl. masc.) 'crowded, close-set'. ACCENT: Arc. 71. 4. R. FREQ.: 23.

ῥάμνος, **ἡ** 'prickly shrub'. Eupolis (in Plutarch, *Moralia* 662e = Eupolis fr. 13. 5 K–A)+. ET.: Probably from **ῥάβνος*, and connected to *ῥάβδος*, *ἡ* 'rod, wand'; see Frisk (1960–72: ii. 641). ACCENT: Arc. 71. 4. R. FREQ.: 2.

κρημνός, ***ὁ*** 'overhanging bank'. Hom. (*Il.* 12. 54+)+. ET.: *κρεμάννῡμι* 'hang up'; see Frisk (1960–72: ii. 16). F. FREQ.: 61.

καπνός, ***ὁ*** 'smoke'. Hom. (*Il.* 1. 317+)+. ET.: Probably related to Lith. *kvãpas* 'breath', *kvẽpti* 'breathe'; see Fraenkel (1962: 325–6) and Frisk (1960–72: i. 782) for further possibly related forms and discussion of difficulties. ACCENT: Arc. 71. 2. F. FREQ.: 89.

στέρνον, ***τό*** 'breast, chest'. Hom. (*Il.* 2. 479+)+. ET.: Root **ster(H$_3$)-* of *στρατός*, *ὁ* 'army, host' (q.v., App. 2.2), Skt *stṛṇā́ti* 'spread, spread about'. R. FREQ.: 97.

πόρνος, ***ὁ*** 'catamite'. Aristophanes (*Pl.* 155)+. ET.: *πέρνημι* 'sell', 3rd sg. aor. *ἐπέρασσε*. Formed secondarily from the feminine noun *πόρνη* 'prostitute' (Frisk 1960–72: ii. 581). ACCENT: Sch. *Il.* 24. 316a[1] (A); Eust. 1352. 16. R. FREQ.: 9.

τόρνος, ***ὁ*** 'tool for drawing a circle'. Theognis (805)+. ET.: Root of *τείρω* < **τέρ-ι̯ω* 'oppress', *τετραίνω* 'bore through', aor. inf. *τορεῖν* 'bore through'; see Frisk (1960–72: ii. 913–14). ACCENT: Sch. *Od.* 15. 312 (BHQ). R. FREQ.: 6.

κεραυνός, ***ὁ*** 'thunderbolt'. Hom. (*Il.* 8. 133+)+. ET.: Derived from a lost primary verb that also lies behind *κεραΐζω* 'ravage, plunder' (Frisk 1960–72: i. 828). Frisk assumes that *κεραυνός* is a thematization of an athematic **r/n*-stem **κεραϝαρ*, but there is no evidence for an athematic form. ACCENT: Arc. 73. 5–6. F. FREQ.: 110.

βόθῡνος, ***ὁ*** 'hole, trench'. Cratinus (in Antiatt. 85. 4 = Cratinus fr. 219. 2 K–A)+. ET.: Root of *βόθρος*, *ὁ* 'hole, trench', Lith. *bèsti* 'dig', Lat. *fodiō* 'dig', etc. (see Frisk 1960–72: i. 248–9). ACCENT: Arc. 75. 12. R. FREQ.: 2.

πλυνός, ***ὁ*** 'wash-trough'. Hom. (*Il.* 22. 153+)+. ET.: *πλῡ́νω* 'wash', *πλυτός* 'washed'. ACCENT: Arc. 72. 17. F. FREQ.: 5.

φρῡνός/φρῦνος, ***ὁ(/ἡ)*** 'toad'. Aristotle (*HA* 609[a] 24+)+. ET.: Likely to be in origin the IE word for 'brown', **b^{h}ruHno-*, OHG *brūn*, on the same root as e.g. Avestan *bawra-* 'beaver'; see Frisk (1960–72: ii. 1047). ACCENT: Final accent implied by Hrd. *διχρ.* 10. 12–14, but recessive accentuation sometimes transmitted in manuscripts: see e.g. the note at Lentz (1867–70: i. 177). U. FREQ.: 2.

στρίφνος, ***ὁ*** 'tough meat'. Septuagint (Job 20. 18). ET.: Likely to be related to *στρίφος*, with which the *Suda* (*λ* 603) glosses *λίσπος* ('smooth') as applied to vertebrae; see Frisk (1960–72: ii. 810). Cf. the adjective *στριφνός* 'firm, hard, solid', attested from Hippocrates on. R. FREQ.: 0.

μόρφνος, ***ὁ*** *kind of eagle*. Hom. (*Il.* 24. 316, if a noun there)+. ET.: At *Il.* 24. 316 and Hesiod, *Scutum* 134, *μόρφνος* could be taken as either an adjective or a noun in apposition to another noun. The word was taken to be a noun in the 4th and 3rd centuries BC: see Aristotle, *HA* 618[b]25 and Lycophron, *Al.* 838 (cf. LSJ s.v.). For the etymology see

App. 3.1 s.v. *μόρφνος epithet of an eagle*. ACCENT: See again App. 3.1 s.v. *μόρφνος epithet of an eagle*. R. FREQ.: 2.

λάχνος, **ὁ** 'wool'. Hom. (*Od.* 9. 445). ET.: Formed with the complex suffix *-*sno-* (beside the more common *λάχνη* 'wool', with suffix *-*snā-*), probably on the IE root *$\hat{u}\underset{\circ}{l}\hat{k}$- of Avestan *varəsa-* m./n. 'hair' and cognates; see Frisk (1960–72: ii. 93). R. FREQ.: 1.

λύχνος, **ὁ** 'lamp' (pl. **λύχνοι**, **οἱ** and **λύχνα**, **τά**). Hom. (*Od.* 19. 34)+. ET.: From *λύκσνος. Root of *λεύσσω* < *λεύκ-ι̯ω* 'look, see' and cognates (see Frisk 1960–72: ii. 148). ACCENT: Sch. *Il.* 18. 319a[1] (A). R. FREQ.: 49.

ὦνος, **ὁ** 'price paid for a thing'. Hom. (*Il.* 21. 41+)+. ET.: Possibly from *Ϝόσνος, if Skt *vasná-* n. 'price' is connected. The root would be that of the Hitt. 3rd sg. form *waši* 'he buys' (see Frisk 1960–72: ii. 1149). On the phonological difficulties of a direct equation between *ὦνος* and Skt *vasná-* n., see Bechtel (1914: 338); Penney (1978: 276 n. 36); cf. Chantraine (1968–80: 1302–3). The relationship, if any, with Mycenaean *o-na-to* 'portion of land' and *o-no* 'payment' is an additional problem. ACCENT: Arc. 72. 18; Eust. 377. 45. R. FREQ.: 8.

οἰωνός, **ὁ** 'large bird, bird of prey'. Hom. (*Il.* 1. 5+)+. ET.: Probably related either to Latin *auis* 'bird' and cognates, or to the family of *οἶμα*, gen. *-ατος* 'rush, swoop'; see Frisk (1960–72: ii. 373). ACCENT: Arc. 75. 16; Theognost. 68. 17. F. FREQ.: 122.

υἱωνός, **ὁ** 'grandson'. Hom. (*Il.* 2. 666+)+. ET.: *υἱός*, *ὁ* 'son'. ACCENT: Theognost. 68. 17. F. FREQ.: 6.

Examples of excluded words: *βάλανος* (etymology obscure; see Chantraine (1968–80: 160)); *πελανός*/*πέλανος* (etymology disputed: Frisk (1960–72: ii. 494)); *χόννος* (attested before Eust. (1153. 42) only in Hesychius (*χ* 630 Schmidt), inscriptionally, and at Athenaeus 11. 502b; in the latter place the word is transmitted without accent and hence printed in capitals by Kaibel); *ὕπνος* 'sleep' (likely to be an *r*/*n*-stem in origin; see Frisk (1950; 1960–72: ii. 966 s.v. *ὕπαρ*, 971 s.v. *ὕπνος*)); *πέταχνον* (transmitted, apart from a possible attestation on an ostracon, only without accent at Athenaeus 11. 496a. At Athenaeus 3. 125f = Alexis fr. 60. 2 K–A, *πετάχνωι* is an emendation by Casaubon for *πεταχμωι*. See Kaibel and Kassel–Austin ad locc.); *κύλιχνος* (only attested as a doubtful reading at Pollux 6. 98; see Bethe ad loc.); *κοινωνός* (probably back-formed from *κοινωνέω*: see Leumann (1950: 224 n. 20)).

APPENDIX 4

Data for Chapter 9

4.1 Adjectives with suffix -λο-

The following abbreviations are used to encode information at the end of each entry: (*a*) F = finally accented; R = recessive; I = intermediate accentuation; U = uncertain or variable accentuation, i.e. more than one accentuation pattern is attested and no decision could be made between them. Where more than one accentuation is attested but some decision could be reached, this decision has been explained in the note and the word has been classified as F, R, or I. (*b*) FREQ.: the figure given after 'FREQ.' is the number of occurrences of the word in the Perseus Digital Library corpus (Crane 1999), which contained *c*.3,400,000 words at the time of use (January 1999). This number is used as a frequency index.

μεγάλοι, αι, α 'big'. Hom. (*Il.* 2. 839+)+. ET.: Cf. the suppletive nom. sg. m. *μέγας* 'big'. ACCENT: Arc. 61. 20 (although the MSS reading here prescribes recessive accentuation: see Schmidt ad loc.); *Ep. Ps.* 68. 21–4; *EM* 553. 25–38. I. FREQ.: OVER 500.

ῥαδαλός 'wavering, flickering'. Hom. (Zenodotus' reading at *Il.* 18. 576) +. ET.: Cf. *ῥαδινός* 'slender', *περιρρηδής* 'sprawling': Risch (1974: 108, 'unsicher'). On the choice between *ῥαδαλόν* and *ῥοδανόν* at *Il.* 18. 576, and for two post-Homeric literary attestations of *ῥαδαλός* (one of them as a variant for *ῥαδινόν*) see West (2001: 133–5 with n. 57). ACCENT: The word appears with final accent at Sch. *Il.* 18. 576a^{3} (A^{int}) and Sch. *Il.* 18. 576a^{1}(A) (twice) in codex Venetus Marc. 822. F. FREQ.: 0.

χθαμαλός, ή, όν 'near the ground'. Hom. (*Od.* 9. 25+)+. ET.: *χθών*, gen. *χθονός* 'earth', Skt *kṣám-ya-* 'terrestrial'. ACCENT: Arc. 61. 19. F. FREQ.: 9.

ὁμαλός, ή, όν 'level'. Hom. (*Od.* 9. 327)+. ET.: *ὁμός* 'one and the same'. ACCENT: implied at *EM* 44. 29. F. FREQ.: 18.

νύσταλος, ον 'drowsy'. *Comica adespota* (in *Ep. Hom. alph. ν* 51 = *Comica adespota* fr. 162 K–A). ET.: *νυστάζω* 'be half asleep, doze'. R. FREQ.: 0.

γυαλός 'cubical'. Callimachus (in Sch. *Il.* 5. 99a (AT) and Eust. 526. 42 = Callimachus fr. 236. 1 Pf.). ET.: Cf. *γυῖα* < **γυ-ϳα*, *τά* 'limbs'. ACCENT: Sch. *Il.* 5. 99a (AT) and Eust. 526. 40–2 say that *γυαλόν* is finally accented when an adjective, both quoting Callimachus (fr. 236. 1 Pf.). Eust. ascribes the doctrine to Apion and Herodorus, and explicitly

prescribes recessive accentuation for the noun *γύαλον* 'hollow'. F. FREQ.: 0.

τροχαλός, ***ή***, ***όν*** 'running'. Hesiod (*Op.* 518)+. ET.: *τρέχω* 'run', *τροχός*, *ὁ* 'wheel'. ACCENT: Arc. 61. 19. F. FREQ.: 2.

στρεβλός, ***ή***, ***όν*** 'twisted, crooked'. Aristophanes (*Ra.* 878+)+. ET.: Ultimately related to *στρέφω* 'turn about or aside'; cf. *στρόβος*, *ὁ* 'whirling round', *στραβός*, *ή*, *όν* 'squinting'. See Frisk (1960–72: ii. 806–7). ACCENT: Arc. 60. 15. F. FREQ.: 3.

δειελός/δείελος, ***ον*** 'of or towards afternoon or evening'. Hom. (*Od.* 17. 606)+. ET.: See App. 4.2 s.v. *δειελός/δείελος*, *ὁ* and *δειελόν/δείελον*, *τό* 'afternoon or evening'. ACCENT: See again App. 4.2 s.v. *δειελός/δείελος*, *ὁ* and *δειελόν/δείελον*, *τό* 'afternoon or evening'. U. FREQ.: 1.

εἴκελος (and ***ἴκελος***), ***η***, ***ον*** 'like'. Hom. (*Il.* 4. 253+)+. ET.: *ἔοικα* (perf.) 'be like'. ACCENT: Arc. 62. 7–8. R. FREQ.: 23.

στυφελός/στύφελος, (***η***), ***ον*** 'hard, rough'. Aeschylus (*Pers.* 79+)+. ET.: Explained by Frisk (1960–72: ii. 815) as a replacement for *στυφλός/στύφλος* (q.v.) under the influence of *στυφελίζω* 'strike hard' (a word whose formation is itself unclear). ACCENT: uncertain. There are no ancient grammatical testimonia, and MSS vary between final and recessive accentuation; see West's apparatus to Aeschylus, *Pers.* 79. U. FREQ.: 2.

βέβηλος, ***ον*** 'allowable to be trodden, permitted'. Aeschylus (*Supp.* 509) +. ET.: Probably derived from the perfect *βέβηκα* 'I have walked'; see Frisk (1960–72: i. 230) and cf. *βέβαιος* 'firm, steady'. ACCENT: Sch. *Il.* 18. 580b[1] (A); Theognost. 62. 2; *Ep. Ps.* 116. 20. R. FREQ.: 7.

ῥῑγηλός, ***ή***, ***όν*** 'making to shudder'. Hesiod (*Scutum* 131)+. ET.: *ῥῑγέω* 'shudder', *ῥῖγος*, *τό* 'frost, cold'. ACCENT: Arc. 62. 14. F. FREQ.: 1.

σῑγηλός (and Doric ***σῑγᾱλός***), (***ή***), ***όν*** 'silent'. Pindar (*P.* 9. 92)+. ET.: *σῑγάω* 'keep silence', *σῑγή* 'silence'. ACCENT: Arc. 62. 16. F. FREQ.: 5.

δῆλος, (***η***), ***ον*** 'visible, clear'. Hom. (*Od.* 20. 333)+. ET.: *δέατο* 'seemed'. ACCENT: Sch. *Il.* 15. 338a (A); Eust. 1018. 63; *Ep. Ps.* 136. 1–3 (implicit). R. FREQ.: OVER 500.

κίβδηλος, ***ον*** 'adulterated, base'. Theognis (965+)+. ET.: *κίβδος* 'dross or alloy of gold' (Pollux 7. 99); see Frisk (1960–72: i. 848). For a different view (*κίβδηλος* borrowed wholesale) see Szemerényi (1974: 155–6). R. FREQ.: 20.

ἀτυζηλός, ***ή***, ***όν*** 'terrifying'. Apollonius Rhodius (2. 1057). ET.: *ἀτύζομαι* 'be distraught from fear'. ACCENT: Sch. Ap. Rh. 2. 1052–7c. F. FREQ.: 0.

ἔκηλος (and Doric ***ἔκᾱλος***, and ***εὔκηλος***), ***ον*** 'at one's ease'. Hom. (*Il.* 5. 759+)+. ET.: Cf. *ἑκάεργος* (epithet of Apollo) 'acting freely (?)'; see Frisk (1960–72: i. 477, 473). ACCENT: Recessive accentuation is prescribed for the variant form *εὔκηλος* at Arc. 62. 13. R. FREQ.: 29.

χαμηλός, **ή**, **όν** 'on the ground'. Pindar (*P.* 11. 30)+. ET.: Root of *χαμαί* 'on the ground'. ACCENT: Theognost. 62. 4; *Ep. Ps.* 116. 20–1. F. FREQ.: 3.

ἐρυγμηλός/**ἐρύγμηλος** 'loud-bellowing'. Hom. (*Il.* 18. 580). ET.: *ἐρεύγομαι*, aor. *ἤρυγον* 'bellow, roar'; *ἐρυγμαίνω* 'bellow'. ACCENT: Sch. *Il.* 18. 580b[1] (A) (= Tyrannio fr. 46 Haas) prescribes recessive accentuation but mentions Tyrannio's opinion that the word was finally accented; see Haas's discussion (1977: 155–6). Recessive accent at *Il.* 18. 580 in Venetus Marc. 822. U. FREQ.: 1.

μῑμηλός, **ή**, **όν** 'imitative'. *Greek Anthology* (9. 280. 5+)+. ET.: *μῑμέομαι* 'imitate, represent, portray'. ACCENT: Arc. 62. 16; Theognost. 62. 4. F. FREQ.: 0.

καπνηλός, **όν** 'smoky'. Nicander (*Ther.* 54). ET.: *καπνός*, *ὁ* 'smoke'. F. FREQ.: 0.

ὑπνηλός, **ή**, **όν** 'drowsy'. Nicander (*Ther.* 189). ET.: *ὕπνος*, *ὁ* 'sleep'. F. FREQ.: 0.

σιωπηλός, **ή**, **όν** 'silent'. Euripides (*Med.* 320)+. ET.: *σιωπή* 'silence', *σιωπάω* 'keep silence'. F. FREQ.: 1.

ὑδρηλός, **ή**, **όν** 'watery'. Hom. (*Od.* 9. 133)+. ET.: *ὕδωρ*, gen. *ὕδατος* 'water'. ACCENT: Arc. 62. 17. F. FREQ.: 5.

ἀπατηλός, (**ή**), **όν** 'guileful'. Hom. (*Il.* 1. 526)+. ET.: *ἀπατάω* 'deceive', *ἀπάτη* 'deceit'. ACCENT: Arc. 62. 16. F. FREQ.: 7.

πέτηλος, **η**, **ον** 'outspread, stretched; full-grown'. Aratus (271)+. ET.: *πετάννῡμι* 'spread out'. ACCENT: Frisk (1960–72: ii. 520) cites the word as '*πέτηλος* (*-λός*)'. However, the apparent attestation of final accentuation comes only from Hesychius' *βοῦς πετηνός* (Hesychius *β* 83 Schmidt, *β* 977 Latte), emended by Casaubon to *βοῦς πετηλός*, since the context requires the same expression as that mentioned by Athenaeus (9. 376b). Latte prints *πετηλός* without comment at Hesychius *β* 977 Latte, but see Schmidt on Hesychius *β* 83 Schmidt. No confidence can be placed in the accentuation of a word where it is otherwise corrupt, and in any case the accentuation of the Hesychius manuscript is very unreliable (see p. 4). Martin prints *πέτηλον* at Aratus 271; Kaibel prints *πέτηλοι* at Athenaeus 9. 376b. R. FREQ.: 0.

αἰσχυντηλός, **ή**, **όν** 'bashful, modest'. Plato (*Chrm.* 158c+)+. ET.: *αἰσχύνη* 'shame, dishonour', *ἀναίσχυντος* 'shameless, impudent'; see Frisk (1960–72: i. 46). F. FREQ.: 9.

ὑψηλός, (**ή**), **όν** 'high, lofty'. Hom. (*Il.* 2. 395+)+. ET.: *ὕψι* 'on high'. ACCENT: Arc. 62. 17; *Ep. Ps.* 116. 20. F. FREQ.: 259.

ὀργίλος, **η**, **ον** 'inclined to anger, irascible'. Hippocrates (*Epid.* 1. 19 (ii. 656. 5–6 Littré))+. ET.: *ὀργή* 'anger'. ACCENT: Theognost. 62. 8. I. FREQ.: 17.

δειλός, **ή**, **όν** 'cowardly'. Hom. (*Il.* 1. 293+)+. ET.: *δείδω* (old perf.) < **δε-δϝοι̯-α* 'fear', aor. *ἔδεισα* < ** ἐδϝεισα*. ACCENT: Arc. 59.

11 (plus a probably corrupt reading, not fitting the context, at Arc. 60. 2); final accent presupposed by the discussion at Sch. *Il.* 11. 160 (A); Sch. *Il.* 11. 441a[1] (A); Sch. *Il.* 17. 201c (A); Choer., *Περὶ ποσ.* 291. 7–9. F. FREQ.: 191.

ποικίλος, **η**, **ον** 'many-coloured'. Hom. (*Il.* 3. 327+)+. ET.: Skt *péśa-* m. 'architect; ornament'. ACCENT: Choer. Th. 2. 55. 15. I. FREQ.: 161.

κοῖλος, **η**, **ον** 'hollow'. Hom. (*Il.* 1. 26+)+. ET.: From **kou̯ilos*. Cf. Latin *cauus* < **kou̯os* 'hollow'. ACCENT: Arc. 63. 1; Sch. *Il.* 10. 134b (A); Eust. 794. 28. Cf. the further passages cited by Erbse on Sch. *Il.* 10. 134b. Accent presupposed by Hrd. *μον.* 927. 4–5; Io. Al. 6. 23. Cf. *Ep. Ps.* 47. 16 (talking about the neuter *κοῖλον*, used as a noun). R. FREQ.: 182.

ξύσιλος, **ον** 'shaven, smooth'. Sophron (in *Et. Gen.* and *EM* 737. 3 = Sophron fr. 55 K–A). ET.: *ξύω* 'scratch, scrape'. R. FREQ.: 0.

ψῑλός, **ή**, **όν** 'bare'. Hom. (*Il.* 9. 580+)+. ET.: *ψῑ́ω* 'feed on pap'. ACCENT: Arc. 59. 10. F. FREQ.: 185.

δαψιλός, **ή**, **όν** 'ample, wide'. Empedocles (in Aristotle, *Cael.* 294[a]26 = Empedocles fr. B39. 1 D–K). ET.: *δάπτω*, aor. *ἔδαψα* 'devour'. Solmsen (1913: 461–5) argues for a derivative in *-ιλο-* on a lost nominal form in *-σος* (**δάψος* or **δαψός* or both). Frisk (1960–72: i. 348) and Chantraine (1968–80: 252) prefer to regard the derivational base as the aorist stem of the verb or, in Chantraine's view, possibly the sigmatic future. F. FREQ.: 0.

(?) **πολλοί**, **αἱ**, **ά** 'many'. Hom. (*Il.* 1. 3+)+. ET.: Cf. suppletive nom. sg. *πολύς* 'much'. ACCENT: Eust. 1746. 29; Sch. *Il.* 16. 234c (A). Cf. Erbse on Sch. *Il.* 16. 234c. F. FREQ.: OVER 500 (counting only forms with *-λλ-*).

καθάρυλλος/**καθαρύλλος**, **ον** 'dainty'. Plato Comicus (in Athenaeus 3. 110d = Plato Comicus fr. 92. 2 K–A). ET.: *καθαρός* 'clean, pure'. On the suffix, see Schwyzer (1953: 485). ACCENT: The single attestation is in the genitive plural masculine, and therefore could point to intermediate as well as recessive accentuation. There is also an attestation of the adverb *καθαρύλλως* (Cratinus in Athenaeus 9. 396b = Cratinus fr. 29 K–A), but this is no more helpful for determining the accentuation of the adjective. U. FREQ.: 0.

δαυλός, **όν**/**δαῦλος**, **ον** 'thick, shaggy'. Aeschylus (*Supp.* 93+)+. ET.: Likely to be related to *δασύς* 'with a shaggy surface', but Frisk (1960–72: i. 352–3) points out that a direct connection is phonologically impossible (since the *-σ-* of *δασύς* must have a source other than original **s*, which should have been lost intervocalically, whereas if *δαυλός* comes from **dasulós* the lost *-s-* *must* be due to original **s*). It is possible that *δαυλός* derives from **dn̥su-lo-s* whereas *δασύς* is from **dn̥tus*. On the whole problem see Frisk (1960–72: i. 351, 352–3), with further bibliography. ACCENT: Final accent

apparently prescribed by Arc. 59. 19, but the passage relates to nouns (so rightly Radt (1982: 243)), and Pausanias Grammaticus in Eust. 274. 23–5 prescribes a recessive accent. Radt (1982) argues that Herodian in fact prescribed recessive accentuation. Radt understands *δαυλός* 'fire-brand' or *γαυλός* 'milk-pail' rather than *δαυλός* 'thick' at Arc. 59. 19, and he corrects *δοῦλος* 'slave' to *δαῦλος* 'thick' at Arc. 60. 1–2 (where an adjective is required). Both *δαυλός* and *δαῦλος* are transmitted in manuscripts, though Radt (1982) attempts to show that *δαῦλος* is transmitted for the most important grammatical texts. It is apparent from the evidence he cites, however, that the case is by no means clear-cut. See also West on Aeschylus, *Supp*. 93 and Radt on Aeschylus fr. 27 Radt. U. FREQ.: 2.

σαῦλος, ***η***, ***ον*** *an adjective descriptive of gait and carriage*. *Homeric Hymns* (4. 28)+. ET.: Possibly related to Hesychius' *σαυνά· ἁπαλά* ('tender'; Hesychius *σ* 272 Schmidt); see Frisk (1960–72: ii. 683–4). R. FREQ.: 1.

φαῦλος, (***η***), ***ον*** 'cheap, easy, slight, paltry'. Sophocles (in e.g. *Suda φ* 141 = Sophocles fr. 41 Radt +)+. ET.: Could be dissimilated from **φλαῦλος*; cf. *φλαῦρος* 'petty, paltry, trivial'. See Frisk (1960–72: ii. 998). ACCENT: Arc. 59. 21, 60. 1. R. FREQ.: OVER 500.

γογγύλος/γόγγυλος, ***η***, ***ον*** 'round'. Aeschylus (in Strabo 4. 1. 7 = Aeschylus fr. 199. 7 Radt)+. ET.: Cf. *γόγγρος*, *ὁ* 'conger-eel'. A *u*-stem **gongus* may be preserved in ON *kǫkkr* 'ball'; see Solmsen (1909: 219); Frisk (1960–72: i. 319). Detailed discussion of the etymology in Solmsen (1909: 213–22). ACCENT: The text of *Ep*. *Hom*. *alph*. *α* 266 prescribes intermediate accentuation (with Cramer's necessary emendation *παροξύνεται* for *προπαροξύνεται*; cf. the parallel passage of Arc., 63. 19–64. 3) for *στρογγύλος*, attributing this word to Callimachus in the phrase *στρογγύλος ἐστὶ λίθος*. The same phrase is attributed to Callimachus by Sch. Ar. *Pax* 28e, with the word *γογγύλος* (so MS 'Lh', but *γόγγυλος* 'V'; see Holwerda ad loc.) for *στρογγύλος*. The correct reading for Callimachus is most likely to be *γογγύλος* (see Pfeiffer 1949–53: i. 414, on Callimachus fr. 606 Pf.), and Meineke proposed the emendation *γογγύλος* for the passage in the *Epimerismi Homerici*. We cannot be certain, however, that the grammarian read *γογγύλος* rather than *στρογγύλος* in Callimachus. The argument for *στρογγύλος* is strengthened somewhat by the fact that Arc. (64. 1) prescribes intermediate accentuation for *στρογγύλος* together with *ἀγκύλος* and *καμπύλος*, which also appear in the *Ep*. *Hom*. *alph*. passage. At Nicander, *Ther*. 855 Jacques prints *γογγύλοι*, noting a manuscript variant *γόγγυλοι*. Arc. (64. 8) prescribes *recessive* accentuation for *γόγγυλος*, apparently with reference to a noun, but other evidence for a noun *γόγγυλος* is lacking (see LSJ Revised Supplement, s.v., and cf. Jacques's note on Nicander, *Ther*. 855). U. FREQ.: 2.

στρογγύλος, ***η***, ***ον*** 'round, spherical'. Herodotus (2. 92. 3+)+. ET.: Root of *στράγξ*, gen. *στραγγός* 'trickle, drop'; see Frisk (1960–72: ii. 811). ACCENT: see under *γογγύλος*, above. I. FREQ.: 46.

ἡδύλος, ***η***, ***ον*** 'pleasant'. Apollonius Dyscolus (*Adv.* 172. 1). ET.: *ἡδύς* 'pleasant'. ACCENT: *Ep. Hom. alph. α* 266 prescribes intermediate accentuation for what is probably the personal name *Ἡδύλος*. I. FREQ.: 0.

ἀγκύλος, ***η***, ***ον*** 'curved'. Hom. (*Il.* 5. 209+)+. ET.: *ἄγκος*, *τό* 'hollow'. ACCENT: Arc. 64. 1; *Ep. Hom. alph. α* 266 (the latter with Cramer's necessary emendation *παροξύνεται* for *προπαροξύνεται*). I. FREQ.: 6.

μικκύλος 'small'. Moschus (1. 13). ET.: *μικκός* (Doric and Boeotian) 'small'. I. FREQ.: 0.

αἰμύλος, (***η***), ***ον*** 'wheedling, wily'. Hesiod (*Op.* 374)+. ET.: Likely on structural grounds to be an adjective in *-υλο-*, although the etymology is uncertain; cf. Frisk (1960–72: i. 40). ACCENT: Arc. 63. 20. I. FREQ.: 12.

δρῑμύλος, ***ον*** 'piercing'. Moschus (1. 8). ET.: *δρῑμύς* 'piercing'. I. FREQ.: 0.

στωμύλος, (***η***), ***ον*** 'wordy, talkative'. Aristophanes (*Ach.* 429)+. ET.: Likely to be connected either to *στόμα*, gen. *-ατος* 'mouth' or to Skt *stāmú-* (meaning unknown, but see Frisk (1960–72: ii. 817)). ACCENT: Arc. 63. 20. I. FREQ.: 1.

καμπύλος, ***η***, ***ον*** 'curved'. Hom. (*Il.* 3. 17+)+. ET.: *κάμπτω* 'bend'. ACCENT: Arc. 64. 1; *Ep. Hom. alph. α* 266 (the latter with Cramer's necessary emendation *παροξύνεται* for *προπαροξύνεται*). I. FREQ.: 25.

νότυλος 'moist(?)'. Archigenes (in Galen 8. 662. 16). ET.: *νότος*, *ὁ* 'south wind', *νοτερός* 'damp, moist'. R. FREQ.: 0.

ἐρωτύλος 'to do with love'. Bion (in Stobaeus 4. 20. 26 = Bion 10. 10+). ET.: *ἔρως*, gen. *-ωτος* 'love'. Cf. App. 4.2 s.v. *ἐρωτύλος*, *ὁ* 'darling'. ACCENT: Arc. 64. 19 (adj. and noun not distinguished). I. FREQ.: 0.

σιφλός, ***ή***, ***όν*** 'crippled, maimed'. Apollonius Rhodius (1. 204)+. ET.: Related to Hesychius' *σιφνός· κενός* ('empty'; Hesychius *σ* 787 Schmidt), but see Frisk (1960–72: ii. 713). ACCENT: Sch. Ap. Rh. 1. 204a distinguishes *σιφλός* 'crippled, maimed' from *σίφλος*, *ὁ* 'defect, blemish'. The accent is not explicitly mentioned, but Lentz (1867–70: i. 158. 14) is clearly right in assuming the accent to be at issue. F. FREQ.: 0.

τυφλός, ***ή***, ***όν*** 'blind'. Hom. (*Il.* 6. 139)+. ET.: Cf. *τῡ́φω* 'raise a smoke'. ACCENT: Arc. 60. 14. F. FREQ.: 109.

στυφλός/στύφλος, ***ον*** 'hard, rough'. Aeschylus (*Pers.* 303+)+. ET.: Likely to be related to *στῡ́φω* 'contract, draw together', but see Frisk (1960–72: ii. 815). ACCENT: Frisk (1960–72: ii. 815) implies that both final and recessive accentuation are attested, but that recessive accentuation is the better attested: 'Die Barytonese bei *στύφλος* fällt auf (vgl. immerhin *φαῦλος*, *μάχλος*, *κτίλος* u.a.), verdient aber schon als lectio

difficilior der schlechter bezeugten Oxytonese vorgezogen zu werden.' U. FREQ.: 5.

φειδωλός, **(*ή*)**, ***όν*** 'sparing, thrifty'. Hesiod (*Op.* 720)+. ET.: *φείδομαι* 'spare'. ACCENT: Arc. 65. 8 (adj. and noun not distinguished); *Ep. Ps.* 23. 14. F. FREQ.: 20.

ἕωλος, ***ον*** 'a day old'. Hippocrates (*Morb.* 4. 54 (vii. 594. 22 Littré)+)+. ET.: *ἕως*, gen. *ἕω* 'dawn'. ACCENT: Arc. 65. 9; *Ep. Ps.* 23. 15. R. FREQ.: 2.

ἁμαρτωλός, ***όν*** 'erroneous'. Aristophanes (*Th.* 1111)+. ET.: *ἁμαρτάνω* 'miss the mark, err'. ACCENT: Arc. 65. 9; *Ep. Ps.* 23. 10. F. FREQ.: 1.

ψωλός 'circumcised'. Aristophanes (*Pl.* 267+)+. ET.: Root of *ψήν* (pres. inf.) 'rub, wipe'; cf. *ψωρός* 'itchy, scabby, mangy'; see Frisk (1960–72: ii. 1135). ACCENT: Lentz (1867–70: i. 156. 5–6) prints *τὰ δὲ ἐπιθετικὰ ὀξύνεται, χωλός, ψωλός* 'the adjectives are finally accented: *χωλός, ψωλός*'. He reconstructs the rule of which this forms a part from Theognost. 62. 15–19 and Steph. Byz. (esp. 400. 19), but neither mentions the adjective *ψωλός*. Theognostus mentions only the recessive noun *ψῶλος· τὸ χόλος* ('anger'). F. FREQ.: 3.

Examples of excluded words: *πέμπελος* (possibly in origin a reduplicated formation **pel-pel-o-s*: see Blanc (1997) and Blanc in Blanc, Lamberterie, and Perpillou (1999: 1424–5)); *κτίλος* 'tame' (etymology unclear; possibly a borrowing: Morpurgo (1960: 30)); *φίλος* (etymology disputed; quite likely to be based on an athematic *φιλ-*; see Chantraine (1968–80: 1206)).

4.2 Nouns with suffix -λο-

The following abbreviations are used to encode information at the end of each entry: (*a*) F = finally accented; R = recessive; I = intermediate accentuation; U = uncertain or variable accentuation, i.e. more than one accentuation pattern is attested and no decision could be made between them. Where more than one accentuation is attested but some decision could be reached, this decision has been explained in the note and the word has been classified as F, R, or I. (*b*) FREQ.: the figure given after 'FREQ.' is the number of occurrences of the word in the Perseus Digital Library corpus (Crane 1999), which contained *c.*3,400,000 words at the time of use (January 1999). This number is used as a frequency index.

κρέμβαλα, ***τά*** 'castanets'. Popular song (in Athenaeus 14. 636d = *PMG* 955. 4). ET.: Probably related to Lat. *crepō* 'rattle, crack'; see Frisk (1960–72: ii. 14). R. FREQ.: 0.

κύμβαλον, ***τό*** 'cymbal'. Xenophon (*Eq.* 1. 3)+; *v.l.* found in Strabo (10. 3. 13) at Pindar, *Dith.* 2. 9 S–M. ET.: *κύμβη* 'hollow of a vessel; drinking cup, bowl'. R. FREQ.: 4.

ἀστράγαλος, **ὁ** 'vertebra'. Hom. (*Il.* 14. 466+)+. ET.: Root of ὀστέον 'bone' plus further suffixes; see Nussbaum (1986: 12). R. FREQ.: 28.

δᾱλός, **ὁ** 'firebrand'. Hom. (*Il.* 13. 320+)+. ET.: From δαϝελός. Cf. δαίω < *δάϝ-ιω 'kindle'. ACCENT: Hrd. διχρ. 16. 14; *Ep. Ps.* 136. 1–3 (implicit); cf. δᾰ̔ελον at *PSI* xi. 1214a. 13 (1st-cent. AD papyrus of Sophron = Sophron fr. 4. 13 K–A). F. FREQ.: 27.

σκάνδαλον, **τό** 'trap or snare laid for an enemy'. Septuagint (Le. 19. 14+) +. ET.: Related to Lat. *scandō* 'climb, mount' and cognates; see Frisk (1960–72: ii. 717). R. FREQ.: 0.

ἄρδαλος, **ὁ** 'one who does not live purely' (possibly an adjective). Pherecrates (in Erotianus 56. 10). ET.: ἄρδα, **ἡ** 'dirt'. R. FREQ.: 0.

νεκύδαλος or **νεκύδαλλος**, **ὁ** *unidentified insect, perhaps a species of butterfly* (see Louis's note on Aristotle, *HA* 551^{b}12). Aristotle (*HA* 551^{b}12)+. ET.: νέκυς, gen. -υος 'corpse'; see Frisk (1960–72: ii. 301). R. FREQ.: 0.

κνώδαλον, **τό** 'wild creature'. Hom. (*Od.* 17. 317)+. ET.: Cf. κνώδων, gen. -οντος *two projecting teeth on the blade of a hunting spear*. R. FREQ.: 16.

αἴθαλος, **ὁ** 'smoky flame, thick smoke'. Euripides (*Hec.* 911)+. ET.: αἴθω 'light up, kindle'. R. FREQ.: 2.

ἠπίαλος, **ὁ** 'ague'. Theognis (174)+. ET.: ἤπιος 'gentle, mild'; see Frisk (1960–72: i. 640–1). R. FREQ.: 1.

κᾶλον, **τό** 'wood'. *Homeric Hymns* (4. 112)+. ET.: Probably from *καϝελον. Cf. καίω < *κάϝ-ιω 'kindle, burn'. ACCENT: MSS sometimes have καλά for the plural rather than κᾶλα (see T. W. Allen's apparatus at *Homeric Hymns* 4. 112 and Marchant's at Xenophon, *HG* 1. 1. 23), but this variation is likely to reflect confusion with the neuter plural of καλός 'beautiful' rather than any real uncertainty about the accentuation of our word. R. FREQ.: 5.

ψάκαλον, **τό** and **ψάκαλος**, **ὁ** 'new born animal'. Aristophanes of Byzantium (in e.g. Eust. 1625. 48 = Aristophanes of Byzantium fr. 205A Slater). ET.: ψακάς, gen. -άδος 'drop of rain'. R. FREQ.: 0.

διδάσκαλος, **ὁ/ἡ** 'teacher'. *Homeric Hymns* (4. 556)+. ET.: διδάσκω 'teach'. R. FREQ.: 261.

δάμαλος, **ὁ** perhaps 'calf'. Herodian (in Arc. 61. 16). ET.: δάμνημι 'overpower, tame'; see Frisk (1960–72: i. 345). ACCENT: Arc. 61. 16. R. FREQ.: 0.

τρόχμαλος, **ὁ** 'rolled stone, pebble'. Theophrastus (*CP* 3. 6. 4)+. ET.: Possibly derived from an unattested *τροχμός, on the root of τρέχω 'run' (Schwyzer 1953: 492). For another suggestion, see Frisk (1960–72: ii. 928). R. FREQ.: 0.

ῥόπαλον, **τό** 'club, cudgel'. Hom. (*Il.* 11. 559+)+. ET.: ῥέπω 'incline the scale; incline one way or the other'. R. FREQ.: 34.

πάσσαλος, **ὁ** 'peg'. Hom. (*Il.* 5. 209+)+. ET.: From *πάκι̯-αλος. Cf. πήγνῡμι 'fix in', aor. pass. ἐπάγην. ACCENT: πασσάλου at *Il.* 5. 209 on *P. Oxy.* ii. 223, col. 9 (3rd cent. AD). R. FREQ.: 18.

φῡ́σαλος, **ὁ** *kind of toad said to puff itself up*. Lucian (*Philops.* 12+)+. ET.: φῦσα, ἡ 'pair of bellows'. R. FREQ.: 0.

πέταλον, **τό** 'leaf'. Hom. (*Il.* 2. 312+)+. ET.: Cf. πίτνημι 'spread out', aor. ἐπέτασα. R. FREQ.: 19.

κρόταλον, **τό** 'clapper'. *Homeric Hymns* (14. 3)+. ET.: κροτέω 'make to rattle', κρότος, ὁ 'rattling noise'. R. FREQ.: 11.

σκύταλον, **τό** 'club, cudgel'. Pindar (*O.* 9. 30)+. ET.: Root of Lith. *skùtas* 'scrap'; see Frisk (1960–72: ii. 744). R. FREQ.: 6.

γύαλον, **τό** 'hollow'. Hom. (*Il.* 5. 99+)+. ET.: Cf. γυῖα < *γυ-ι̯α, τά 'limbs'. ACCENT: Sch. *Il.* 5. 99a (AT) and Eust. 526. 40–2 say that the adjective γυαλός 'cubical' is finally accented. Eust. ascribes the doctrine to Apion and Herodorus and explicitly prescribes recessive accentuation for the noun γύαλον. The contrast with recessive γύαλον is also implicit in the Homeric scholion. Cf. γύαλον at *Il.* 5. 99 on *P. Oxy.* ii. 223, col. 4 (3rd cent. AD). R. FREQ.: 28.

γνάφαλος, **ὁ** *unknown bird*. Aristotle (*HA* 616^{b}16). ET.: Probably influenced by both κνάπτω 'card or comb wool; mangle, tear', and γνάμπτω 'bend'; cf. Frisk (1960–72: i. 881–2), who does not mention this word but discusses other words formed on a synchronic root γναφ-. R. FREQ.: 0.

ὀμφαλός, **ὁ** 'navel, boss'. Hom. (*Il.* 4. 525+)+. ET.: Cf. Skt *nā́bhi-* f. 'navel, hub'. ACCENT: Arc. 61. 11; *Ep. Ps.* 68. 20–1. F. FREQ.: 36.

δειελός/δείελος, **ὁ** and **δειελόν/δείελον**, **τό** 'afternoon or evening'. Hom. (*Il.* 21. 232)+. ET.: The word is connected to δείλη 'afternoon or evening', although the exact connection is not clear (see Chantraine (1968–80: 257); Frisk (1960–72: i. 355)); our word seems to contain the complex suffix -ελο-. An adjective δειελός/δείελος 'of or towards afternoon or evening' is attested at *Od.* 17. 606 and in Hellenistic poets. A meaning 'afternoon or evening meal' is attested for δειελός/δείελος or δειελόν/δείελον at Callimachus fr. 238. 20 Pf. The adjectival function is likely to be primary; see Solmsen (1901: 89). ACCENT: MSS normally assign the word recessive accentuation (Solmsen 1901: 87). However, Arc. (62. 4) tells us that the word was finally accented: τὸ δειελός (τὸ δειλινὸν) ὀξύνεται 'δειελός (in the afternoon or evening/afternoon or evening meal) is finally accented . . .'. Pfeiffer (1949–53: i. 235) takes this statement to concern only the meaning δειλινόν, which he takes to be here 'afternoon or evening meal', as at Athenaeus 1. 11e. It is not clear, however, whether this is Arcadius' (or Herodian's) intention. Pfeiffer takes the Homeric scholia on *Il.* 21. 232 to be prescribing recessive accentuation specifically for δείελος 'afternoon or evening', but I doubt

whether the glossing of δείελος with δείλη here is meant to restrict the application of what is said to δείελος in this meaning. The word δειελος occurs twice on accented papyri of Callimachus, in one instance with recessive and in the other with final accentuation (recessive = *P. Oxy.* xi. 1362, fr. 4. 4 = Callimachus fr. 181. 4 Pf.; finally accented = *P. Oxy.* xix. 2216, fr. 1^{v}. 4 = part of Callimachus fr. 238. 20 Pf.). In the latter papyrus, dated to the 3rd century AD, the word has the meaning 'afternoon or evening meal'. The context of the first papyrus, dated to the 1st century AD, is too broken for the meaning of δείελο[to be discernible. Since only one of the Callimachus papyri has a clear context, these papyri do not provide evidence for or against Pfeiffer's view that a difference in accentuation was associated with a difference in meaning. U. FREQ.: 3.

σκόπελος, **ὁ** 'lookout place, peak'. Hom. (*Od.* 12. 73+)+. ET.: Cf. σκοπέω 'behold'. ACCENT: Lentz (1867–70: i. 160. 24) reconstructs σκόπελος for Herodian on the basis of Theognost. 61. 30. Theognostus' list contains both finally accented and recessive words, but the recessive words are given first; σκόπελος appears in this first part of the list. R. FREQ.: 30.

μυελός/**μῡελός**, **ὁ** 'bone-marrow'. Hom. (*Il.* 20. 482+)+. ET.: Cf. μῡών, gen. -ῶνος 'muscle'. ACCENT: Arc. 62. 5. F. FREQ.: 28.

πύελος and **πύαλος**, **ἡ** 'trough'. Hom. (*Od.* 19. 553)+. ET.: From *πλύελος. Cf. πλῦνω < *πλύν-ιω 'wash'. ACCENT: Arc. 62. 2–3. R. FREQ.: 8.

πτύελον (and **πτύαλον**), **τό** and **πτυελός**/**πτύελος**, **ὁ** 'saliva'. Hippocrates (*Mul.* 1. 11 (viii. 44. 12 Littré)+)+. ET.: πτύω 'spit out'. ACCENT: Cramer prints πτυελός at Theognost. 61. 30; Lentz (1867–70: i. 160. 21) emends without comment to πτύελος and reconstructs the word for Herodian. Printed texts normally transmit recessive accentuation, but Lentz's correction is perhaps too confident, especially as the list given by Theognostus appears to be ordered with recessive words first and then finally accented words, with πτυελός coming in the latter block of finally accented words. U. FREQ.: 1.

δρύψελον, **τό** 'flake'. Parthenius (in *Et. Gen.* and *EM* 289. 1 = Parthenius frr. 30, 31 Lightfoot). ET.: δρύπτω 'tear, strip'. R. FREQ.: 0.

βηλός, **ὁ** 'threshold' (but in antiquity sometimes interpreted as 'sky'). Hom. (*Il.* 1. 591+)+. ET.: βαίνω 'go', aor. ἔβη. ACCENT: Final accent prescribed by Arc. 59. 16. Eust. (1003. 38) reports that Crates accented the word recessively. So also Sch. *Il.* 15. 23b^{1} (T). Sch. *Il.* 1. 591 (*B), quoted by Erbse on Sch. *Il.* 1. 591c, reports that Crates accented the word recessively and said it was Chaldaean. Lex. rhet. Bekk. 225. 29–30 reports as follows: *Βῆλος· ὁ οὐρανός, βαρυτόνως, καὶ Ζεύς, καὶ Ποσειδῶνος υἱός. ὀξυτόνως δὲ ὁδὸς οἴκου ἢ σταθμός* ('Recessive βῆλος means "sky", "Zeus", and "son of Poseidon". But with final accent the word means "driveway of a house" or "threshold" '). The

view that the word was of Chaldaean origin and the view that it meant 'sky' are connected by Sch. *Il.* 1. 591c (Ab(BE^3)T): *βηλόν τινες κατὰ Χαλδαίους τὴν ἀνωτάτω τοῦ οὐρανοῦ περιφέρειαν, οἱ δὲ κατὰ Δρύοπας τὸν Ὄλυμπον. ἄμεινον δὲ τὸν βατῆρα λέγειν* ('Some people say that *βηλός* is a Chaldaean word for the highest arc of the sky, others that it is a Dryopian word for Olympus. But it is better to say that it means ''threshold'' '). Helck (1905: 7–14, with further sources) argues plausibly that Crates had taken over a Stoic doctrine that Homer's *βηλός* meant 'sky' and supported this with a Chaldaean etymology which required that the word be accented recessively. The final accent prescribed by Herodian is preferable to Crates' recessive accent, motivated as it is by an allegorical interpretation of Homer and required for an incorrect etymology. F. FREQ.: 4.

βηλά/βῆλα, ***τά*** 'sandals'. Panyassis (in Sch. *Il.* 1. 591 (*B), cited by Erbse on Sch. *Il.* 1. 591c = Panyassis fr. 25 Davies). ET.: *βαίνω* 'go', aor. *ἔβη*. ACCENT: The MS has *βῆλα*. Bekker's emendation *βηλά* is followed by Erbse and Davies and would fit rather better with the logic of the scholion. Cf. the variants *βίολα* and *βαίολα* attested in other sources cited by Davies. U. FREQ.: o.

στράβηλος, ***ὁ/ἡ*** 'snail or shellfish; wild olive'. Sophocles (in Athenaeus 3. 86d = Sophocles fr. 324. 1 Radt)+. ET.: Related e.g. to *στρόβος*, *ὁ* 'whirling round'; Frisk (1960–72: ii. 807) assumes these words to be ultimately connected with *στρέφω* 'turn about', although the difference in root-final consonant is problematic. R. FREQ.: o.

κορύμβηλος, ***ὁ*** 'white-berried ivy'. Nicander (in Athenaeus 15. 683c = Nicander fr. 74. 18 G–S). ET.: *κόρυμβος*, *ὁ* 'uppermost point'. ACCENT: The only occurrence of the word, at Nicander fr. 74. 18 G–S, appears in the poetic genitive singular form *κορυμβήλοιο* (so the reading of MS 'A', although for reasons unclear to me Kaibel prints *κορυμβηλοῖο*). Strictly speaking, this form is ambiguous between recessive and intermediate accentuation, but given the total lack of other intermediately accented words in *-ηλο-*, we may take *κορύμβηλος* to have recessive rather than intermediate accentuation. R. FREQ.: o.

ζῆλος, ***ὁ*** (later n. *s*-stem) 'jealousy'. Hesiod (*Op.* 195)+. ET.: Probably related to *ζητέω* 'seek' (Frisk 1960–72: i. 613). ACCENT: Arc. 59. 17; Sch. *Il.* 15. 338a (A). R. FREQ.: 59.

δείκηλον (and ***δείκελον***), ***τό*** 'representation, exhibition'. Herodotus (2. 171. 1)+. ET.: *δείκνῡμι* 'bring to light, show forth'. R. FREQ.: 1.

ἄρκηλος, ***ὁ*** *an animal exhibited by Ptolemy II*. Callixinus (in Athenaeus 5. 201c)+. ET.: *ἄρκος*, *ὁ/ἡ* 'bear'. R. FREQ.: o.

πέτηλον, ***τό*** 'leaf, cornstalk'. Hesiod (*Scutum* 289)+. ET.: *πίτνημι* 'spread out', aor. *ἐπέτασα*. Cf. App. 4.1 s.v. *πέτηλος* 'outspread', attested from Aratus on. R. FREQ.: 1.

χηλός, ἡ 'large chest, coffer'. Hom. (*Il.* 16. 221+)+. ET.: Perhaps related to *χάσκω* 'yawn, gape' (see Frisk 1960–72: ii. 1094). ACCENT: Sch. *Il.* 15. 338a (A). F. FREQ.: 9.

τράχηλος, ὁ 'neck, throat'. Herodotus (2. 40. 2+)+. ET.: Likely to be related to *τρέχω* 'run' (see Frisk 1960–72: ii. 920). ACCENT: Arc. 62. 13. R. FREQ.: 44.

στροβῑλός/στρόβῑλος, ὁ 'round ball (e.g. of a hedgehog); whirling dance'. Ion (in e.g. Athenaeus 3. 91e = Ion fr. 38. 4 S–K)+. ET: *στρόβος*, ὁ 'whirling round', *στροβέω* 'whirl about'. ACCENT: Arc. (63. 5–6) prescribes recessive accentuation for the word in the meaning 'kind of dance', but final accentuation for the meaning 'rolling together of a hedgehog'. U. FREQ.: 3.

φάγιλος, ὁ 'lamb'. Aristotle (in Plutarch, *Moralia* 294d = Aristotle fr. 507. 12 Rose +). ET.: Root of *φαγεῖν* (aor. inf.) 'eat'; thus *φάγιλος* denotes a lamb of such an age as to be edible (see Frisk 1960–72: ii. 980). R. FREQ.: 0.

αἴγιλος, ἡ 'herb of which goats are fond'. Theocritus (5. 128)+. ET.: *αἴξ*, gen. *αἰγός* 'goat'. ACCENT: Arc. 62. 21. R. FREQ.: 0.

φρυγίλος, ὁ 'chaffinch'. Aristophanes (*Av.* 763+). ET.: Generally agreed to be a bird name in *-ίλο-*, like *τροχίλος* 'Egyptian plover' (Frisk 1960–72: ii. 1045; Chantraine 1968–80: 1230). The root has been thought to be either that of Latin *fringilla/frigilla* (a small bird) or, phonologically more easily, that of *Φρύξ*, gen. *Φρυγός* 'Phrygian'; see Frisk (1960–72: ii. 1045–6), with bibliography. ACCENT: Theognost. 62. 9. I. FREQ.: 2.

πέδῑλον, *τό* 'sandal'. Hom. (*Il.* 2. 44+)+. ET.: Root of *πούς*, gen. *ποδός* 'foot', Lat. *pēs*, gen. *pedis* 'foot'. R. FREQ.: 39.

ὅμῑλος, ὁ 'assembled crowd'. Hom. (*Il.* 3. 36+)+. ET.: Root of *ὁμός* 'one and the same'. ACCENT: Arc. 63. 7. R. FREQ.: 153.

σχοινιλός/σχοινίλος or **σχοινίκλος/σχοίνικλος**, ὁ *a bird, perhaps a lapwing* (see Louis's note on Aristotle, *HA* 593^{b}4). Aristotle (*HA* 593^{b}4). ET.: *σχοῖνος*, ὁ/ἡ 'rush, reed'. ACCENT: At the only occurrence of the word (Aristotle, *HA* 593^{b}4), Louis records MS variants *σχοινῖλος*, *σχοινιλὸς*, *σχοίνικλος*, and *σχοινίκλος*. He prints *σχοινίλος*, which would make the word a bird name in *-ίλος* like *φρυγίλος* 'chaffinch', *τροχίλος* 'Egyptian plover', or *ὀρχίλος* (probably a wren). U. FREQ.: 0.

πομπίλος, ὁ *fish that follows ships*. Erinna (in Athenaeus 7. 283d = (Ps.-) Erinna fr. 404. 1 Lloyd-Jones–Parsons)+. ET.: *πέμπω* 'send; escort', *πομπός*, ὁ 'escort, guide'. I. FREQ.: 0.

κοντίλος/κόντιλος, ὁ 'pole'. Eupolis (in *Et. Gen.* and *EM* 529. 8 = Eupolis fr. 364 K–A). ET.: *κοντός*, ὁ 'pole'. ACCENT: Both *κοντίλος* and *κόντιλος* are transmitted in manuscripts; *κοντίλος* is a variant at *EM* 529. 8 (see Gaisford ad loc.). U. FREQ.: 0.

ποντίλος, ***ὁ*** 'paper nautilus' (a mollusc). Aristotle (*HA* 525[a]21, with variant readings). ET.: *πόντος*, *ὁ* 'sea'. I. FREQ.: 0.

πτίλον, ***τό*** 'soft feathers, down, wing'. Herodotus (2. 76. 3)+. ET.: Root of *πέτομαι* 'fly', aor. *ἐπτόμην* (Frisk 1960–72: ii. 614). R. FREQ.: 5.

κορυπτίλος, ***ὁ*** 'one that butts with the head'. Theocritus (5. 147). ET.: *κορύπτω* 'butt with the head'. I. FREQ.: 0.

ναυτίλος, ***ὁ*** 'seaman, sailor'. Aeschylus (*A.* 631+)+. ET.: *ναύτης*, *ὁ* 'seaman, sailor'. ACCENT: Arc. 62. 20; Theognost. 62. 8. I. FREQ.: 21.

τροχίλος, ***ὁ*** 'Egyptian plover'. Herodotus (2. 68. 4+)+. ET.: *τρέχω* 'run'. I. FREQ.: 8.

ὀρχίλος, ***ὁ*** *a bird, probably a wren.* Aristophanes (*Av.* 568+)+. ET.: Perhaps derived from *ὀρχέομαι* 'dance' (see Frisk 1960–72: ii. 433). I. FREQ.: 2.

βδόλος, ***ὁ*** 'stench, stink'. *Comica adespota* (in e.g. *Et. Gen.* *β* 73 L–L = *Comica adespota* fr. 168. 1 K–A). ET.: *βδέω* 'break wind'. R. FREQ.: 0.

ψόλος, ***ὁ*** 'soot, smoke'. Aeschylus (in Sch. Nic. *Ther.* 288c = Aeschylus fr. 24 Radt). ET.: Exists beside Hesychius' gloss *ψόμμος· ἀκαθαρσία. καπνός* ('uncleanliness, smoke'; Hesychius *ψ* 245 Schmidt). Possibly formed on the root of *ψῆν* (pres. inf.) 'rub, wipe'; see Frisk (1960–72: ii. 1139–40). ACCENT: *Ep. Hom. alph.* *χ* 32. R. FREQ.: 0.

ὅπλον, ***τό*** 'tool'. Hom. (*Il.* 10. 254+)+. ET.: Formed on the root of **ἕπω* 'be about, busy oneself with' (attested in the pres. participle active at *Il.* 6. 321, otherwise only with prefixes, e.g. *ἀμφιέπω* 'go about, be busy about'): see Frisk (1960–72: ii. 405). R. FREQ.: OVER 500.

ναῦλος, ***ὁ*** and ***ναῦλον***, ***τό*** 'passage-money, fare, freight'. Aristophanes (*Ra.* 270)+. ET.: Likely to be derived from *ναῦς*, *ἡ* 'ship' (see Frisk 1960–72: ii. 292). ACCENT: Arc. 59. 20. R. FREQ.: 28.

ἰαμβύλος, ***ὁ*** 'libeller'. Herodian (in Arc. 64. 20). ET.: *ἴαμβος*, *ὁ* 'iambus; iambic poem, lampoon'. ACCENT: Arc. 64. 20. I. FREQ.: 0.

κόνδυλος, ***ὁ*** 'knuckle, knob'. Aristophanes (*V.* 254+)+. ET.: Related to Hesychius' gloss *κόνδοι· κεραῖαι. ἀστράγαλοι* ('horns, vertebrae'; Hesychius *κ* 3496 Latte). ACCENT: Arc. 64. 7–8. R. FREQ.: 14.

σφόνδυλος, ***ὁ(/ἡ)*** 'vertebra; joint'. Euripides (*El.* 841+)+. ET.: Likely to be related to *σφενδόνη*, *ἡ* 'sling' (see Frisk 1960–72: ii. 833). ACCENT: Arc. 64. 8. R. FREQ.: 10.

κύλα or ***κῦλα***, ***τά*** 'parts under the eyes'. Hippocrates (*Morb.* 2. 48 (vii. 72. 9 Littré)+)+. ET.: Root of *κύαρ*, *τό* 'hole' (Frisk 1960–72: ii. 46). ACCENT: Lentz (1876–70: i. 378. 21) reconstructs *κῦλον* for Herodian on the basis of Theognost. 130. 26. Theognostus does not, however, mention the accent. R. FREQ.: 0.

σκῦλον, ***τό*** (mostly pl.) 'arms stripped off a slain enemy, spoils'. Sophocles (*Ph.* 1428+)+. ET.: Generally connected to *σκῦτος*, *τό* 'skin, hide', *ἐπισκύνιον* 'skin of the brows' (see Frisk 1960–72: ii. 743). R. FREQ.: 30.

κηρύλος, **ὁ** *fabulous seabird*. Archilochus (in Sch. Arat. 1009 = Archilochus fr. 41. 1 West)+. ET.: Probably related either to Skt *śārá-* 'variegated in colour' or to **κήλων**, gen. **-ωνος** 'stallion', in the latter case with dissimilation of **-l-* to *-r-* (see Frisk 1960–72: i. 845). ACCENT: Arc. 63. 17. Martin on Sch. Arat. 1009 reports that MS 'M', the only MS in which the word appears, has **κήρυλος**. Given the testimony of Arcadius, however, I take **κηρύλος** to be the correct accentuation. Cf. Aelian *NA* 12. 9, where Hercher prints **κηρύλος** without textual comment. I. FREQ.: 2.

θρῦλος or **θρύλλος**, **ὁ** 'noise as of many voices, murmur'. *Batrachomyomachia* (135)+. ET.: **θρέομαι** < ***θρέϝομαι** 'cry aloud'. In the variant **θρύλλος**, the gemination is perhaps expressive; see Frisk (1960–72: i. 687–8). ACCENT: Lentz (1867–70: i. 154. 22) reconstructs **θρῦλος** for Herodian on the basis of Theognost. 61. 18–19. Theognostus does not, however, imply a particular accent for this word. Cramer ad loc. prints **θρύλος**. R. FREQ.: 0.

τύλος, **ὁ** 'callus, knob'. Aristophanes (*Ach.* 553)+. ET.: Root of Lat. *tūber* 'lump, swelling'; see Pokorny (1959: 1080–1); Frisk (1960–72: ii. 943). ACCENT: Lentz (1867–70: i. 154. 6) reconstructs **τύλος** for Herodian on the basis of Theognost. 61. 18. Theognostus does not, however, imply a particular accent for this word. Cramer ad loc. prints **τύλος**. R. FREQ.: 2.

ἀρκτύλος, **ὁ** 'bear's cub'. Pollux (5. 15). ET.: **ἄρκτος**, **ἡ** 'bear'. I. FREQ.: 0.

στῦλος, **ὁ** 'pillar'. Aeschylus (*A.* 898)+. ET.: Related to Skt *sthū́-ṇā* f. 'post, pillar, beam, column' (see Frisk 1960–72: ii. 813). ACCENT: Arc. 59. 8. R. FREQ.: 7.

ἐρωτύλος, **ὁ** 'darling'. Theocritus (3. 7)+. ET.: **ἔρως**, gen. **-ωτος** 'love'. Cf. App. 4.1 s.v. **ἐρωτύλος** 'to do with love'. ACCENT: Arc. 64. 19 (adj. and noun not distinguished). I. FREQ.: 0.

φῦλον, **τό** 'race, tribe'. Hom. (*Il.* 2. 362+)+. ET.: **φύομαι** 'become'. ACCENT: Arc. 141. 4. R. FREQ.: 110.

στέμφυλον, **τό** (mostly pl.) 'mass of olives from which the oil has been pressed, olive-cake; mass of pressed grapes'. Aristophanes (*Eq.* 806+) +. ET.: **στέμβω** 'shake about, agitate', **στόμφος**, **ὁ** 'lofty phrases'; see Frisk (1960–72: ii. 788). R. FREQ.: 0.

χῡλός, **ὁ** 'juice'. Cratinus (in Pollux 6. 61 = Cratinus fr. 329 K–A)+. ET.: **χέω** < ***χέϝω** 'pour', **χῡμός**, **ὁ** 'flavour'; see Frisk (1960–72: ii. 1123–4). ACCENT: Arc. 59. 9. F. FREQ.: 3.

ὄχλος, **ὁ** 'crowd'. Aeschylus (*Pers.* 42+)+. ET.: Probably formed on the root of **ἔχω** < **ϝέχω** 'bear, carry, bring', Lat. *uehō* 'bear, carry, convey'; see Frisk (1960–72: ii. 457). ACCENT: Arc. 60. 14. R. FREQ.: 293.

κόχλος, **ὁ** *shellfish with a spiral shell, used for dyeing purple*. Euripides (*IT* 303)+. ET.: Likely to be related to **κόγχη** 'mussel', but the alternation

κοχ-/κογχ- is unexplained: see Frisk (1960–72: i. 937). ACCENT: Arc. 60. 14. R. FREQ.: 6.

μοχλός, ***ὁ*** 'bar, lever, crowbar'. Hom. (*Od.* 5. 261+)+. ET.: Root of *μόχθος*, *ὁ* 'toil', *μογέω* 'toil' (Frisk 1960–72: ii. 262). ACCENT: Arc. 60. 16. F. FREQ.: 39.

ἕδωλον, ***τό*** 'seat, abode'. Lycophron (*Al.* 1320). ET.: *ἕδος*, *τό* 'sitting-place, seat'. R. FREQ.: 0.

εἴδωλον, ***τό*** 'phantom'. Hom. (*Il.* 23. 72+)+. ET.: *εἴδομαι* 'appear'. R. FREQ.: 116.

φειδωλός, ***ὁ*** 'niggard, miser'. Aristophanes (*Pl.* 237)+. ET.: *φείδομαι* 'spare'. Cf. App. 4.1 s.v. *φειδωλός* 'sparing, thrifty'. ACCENT: Arc. 65. 8 (adj. and noun not distinguished). F. FREQ.: 7.

φάσκωλος, ***ὁ*** 'leathern bag, wallet'. Aristophanes (in Athenaeus 15. 690d = Aristophanes fr. 336. 2 K–A). ET.: Likely to be formed on the root of *φάσκον kind of lichen or tree-moss*; see Frisk (1960–72: ii. 996), who also reports another suggestion. ACCENT: Arc. 65. 2. R. FREQ.: 0.

Examples of excluded words: *γογγύλος/γόγγυλος* (no clear attestations as a noun; see LSJ Revised Supplement, s.v.); *δέελος* (according to Ruijgh (1970: 319), at *Il.* 10. 466 a noun meaning 'tie' or 'bundle', but normally taken to be a variant form of the adjective *δῆλος* 'visible, clear'; see Chantraine (1968–80: 272); Sch. *Il.* 10. 466b (A) suggests that in any case recessive accentuation was assigned to the word on the basis of an assumption that it was a variant of *δῆλος*); *πηλός* (etymology unknown); *κτίλος* 'ram' (etymology unclear; possibly a borrowing: Morpurgo (1960: 30)); *ξύλον* (original segmentation unclear).

APPENDIX 5

Data for Chapter 11: Nouns with suffix -*μο*-

The following abbreviations are used to encode information at the end of each entry: (*a*) A = abstract in meaning; C = concrete in meaning; A/C = both abstract and concrete meanings are attested. Very rare meanings of otherwise relatively common words are ignored for this classification (as explained in Chapter 11). A question mark after a code letter indicates that uncertainty was involved in the classification of the word as abstract or concrete. Where a word is classified as A/C and classification of the meanings taken to be abstract is uncertain, uncertainty is indicated thus: A?/C. Where the classification of the meanings taken to be concrete is uncertain, uncertainty is indicated thus: A/C?. Where a word has a range of meanings, the translation of the word given in the entry does not necessarily give all of them, but at least one abstract meaning is given where one exists, and at least one concrete meaning where one exists. (*b*) F = finally accented; R = recessive; U = accent uncertain. (*c*) HOM. = attested in Homer; P = first attested after Homer ('post-Homeric'). (*d*) H = having a heavy penultimate syllable; L = having a light penultimate syllable.

πλόκαμος, ***ὁ*** 'lock or braid of hair'. Hom. (*Il.* 14. 176)+. ET.: *πλέκω* 'plait'; *πλόκος*, *ὁ* 'lock of hair, braid'. ACCENT: Arc. 68. 17. C.R.HOM.L.

σχινδαλαμός/σχινδάλαμος, ***ὁ*** (also ***σκινδαλαμός/σκινδάλαμος***, ***σκινδαλμός/σκίνδαλμος***) 'splinter'. Aristophanes (*Nu.* 130, *Ran.* 819)+. ET.: Root of *σχίζω* 'split', Lat. *scindo* 'cut'. ACCENT: According to Sch. vet. Ar. *Nu.* 130b, the word is finally accented in the nominative but recessive in the oblique cases. This doctrine is known to, but derided by, Tz. Ar. *Nu.* 129a. The second recension printed by Holwerda prescribes recessive accentuation for *σκινδάλαμος*, ascribing the prescription of final accentuation to the *παλαιοὶ σχολιογράφοι* (but see Holwerda ad loc.). Note that *σχινδαλαμός* in Schmidt's text of Arc. (69. 6) is a conjecture by Lobeck. Both final and recessive accents are transmitted for the accusative plural at Aristophanes, *Nu.* 130 (see Dover ad loc.). Similar variation for the genitive plural (emended by Dover to nom. pl.) at *Ra.* 819 (see Dover ad loc.). C.U.P.L.

κάλαμος, ***ὁ*** 'reed'. Alcaeus (at *P. Oxy.* xv. 1788 fr. 1. 5 = Alcaeus fr. 115a. 9 V.; unaccented on the papyrus); Aristophanes (*Nu.* 1006)+. ET.: Related to Lat. *culmus* 'stalk, stem', OHG *halm* 'stalk, stem', etc., and

likely to be a derivative to a disyllabic root: see Ernout and Meillet (1979: 155), s.v. *culmus*. ACCENT: Arc. 68. 18; Sch. *Il.* 24. 228a (A); Eust. 1347. 12. C.R.P.L.

οὐλαμός, **ὁ** 'throng of warriors'. Hom. (*Il.* 4. 251+)+. ET.: Root of *εἰλέω* 'press'; see Chantraine (1968–80: 836). ACCENT: Arc. 69. 1; Sch. *Il.* 24. 228a (A); Eust. 1347. 14; *Ep. Hom. alph.* *ϕ* 42; *Et. Gud.* 560. 15; *EM* 804. 19. Solmsen (1901: 79) is mistaken in regarding the accent of Hesychius' *γόλαμος* (Hesychius *γ* 797 Latte = *γ* 796 Schmidt) as worthy of consideration (on the accentuation of the Hesychius manuscript, see p. 4). Cf. the phonological difficulties encountered by Bechtel (1921–4: i. 120) in attempting to account for the accent of the Hesychian form (and for the form itself) as Aeolic. C.F.HOM.L.

ποταμός, **ὁ** 'river, stream'. Hom. (*Il.* 2. 522+)+. ET.: Root of either *πίπτω* 'fall' or *πετάννῡμι* 'spread open'; see Chantraine (1968–80: 931). ACCENT: Arc. 68. 19; Sch. *Il.* 24. 228a (A); Eust. 1347. 13. C.F.HOM.L.

ὄρχαμος, **ὁ** 'leader, chief'. Hom. (*Il.* 2. 837+)+. ET.: Bader (1974: 7–9) argues for a derivative of *ἄρχω* 'rule', with the ('Achaean') vocalism of Mycenaean *o-ka* (which would represent *ὀρχᾱ́*). Kretschmer (1900: 268), also deriving from *ἄρχω*, regards the vocalism as Aeolic. Chantraine (1968–80: 830) regards the etymology and sense of the word as uncertain. ACCENT: Arc. 69. 5; Sch. *Il.* 24. 228a (A); Eust. 1347. 13. C.R.HOM.L.

ἀγμός, **ὁ** 'fracture'. Euripides (*IT* 263+)+. ET.: *ἄγνῡμι* 'break'. ACCENT: Sch. *Il.* 20. 485a (A). C.F.P.H.

ὀδαγμός, **ὁ** 'itching, irritation'. Sophocles (*Tr.* 770). ET.: *ὀδάξω* 'feel pain or irritation'. A.F.P.H.

τριαγμός, **ὁ** or **τριαγμοί**, **οἱ** 'the triad(s)'. Ion (in e.g. Harpocration *ι* 27). ET.: *τριάζω*, aor. *ἐτρίασα* 'multiply by three'. A?.F.P.H.

ἀλαλαγμός, **ὁ** 'shouting'. Herodotus (8. 37. 3)+. ET.: *ἀλαλάζω* 'raise the war cry; shout aloud'. ACCENT: Arc. 65. 19. A.F.P.H.

παλαγμός, **ὁ** 'sprinkling'. Aeschylus (in Eust. 1183. 17 = Aeschylus fr. 327. 1 Radt). ET.: *παλάσσω*, perf. pass. *πεπάλαγμαι* 'besprinkle, defile'. A.F.P.H.

σταλαγμός, **ὁ** 'dropping, dripping'. Aeschylus (*Th.* 61)+. ET.: *σταλάσσω*, aor. *ἐστάλαξα* 'let drop; drop, drip'. A.F.P.H.

ἀλλαγμός, **ὁ** 'that which is given or taken in exchange'. Manetho Astrologus (4. 189). ET.: *ἀλλάσσω*, aor. *ἤλλαξα* 'make other than it is, change; give in exchange'. C?.F.P.H.

ὑλαγμός, **ὁ** 'barking, baying'. Hom. (*Il.* 21. 575, if *ὑλαγμόν* is read there; if *κυνύλαγμον* is read this compound presupposes the existence of the simplex *ὑλαγμός* for the time of Homer, so on either view of the text the word can be taken as Homeric in date; on the text see West's apparatus ad loc.)+. ET.: *ὑλάσσω* 'bark'. Word formed on the pattern

of *ἰυγμός* 'shout of joy', *οἰμωγμός* 'wailing, lamentation', but without an attested verbal form **ὑλάζω*; see Chantraine (1968–80: 1154 s.v. *ὑλάω*). ACCENT: Arc. 65. 19. A?.F.HOM.H.

αἱμαγμός, **ὁ** 'bloodshed'. Vettius Valens (1. 1. 22+). ET.: *αἱμάσσω*, aor. *ἧμαξα* 'make bloody, stain with blood'. A.F.P.H.

φριμαγμός, **ὁ** 'sound uttered by animals in a state of excitement, snorting by horses'. Lycophron (*Al.* 244)+. ET.: *φριμάσσομαι* 'snort in excitement'. A?.F.P.H.

στεναγμός, **ὁ** 'sighing, groaning'. Aeschylus (in Sch. Soph. *El.* 286 ≈ Aeschylus in Sch. *Il.* 23. 10 (b(BCE^{3}E^4)T) = Aeschylus fr. 385 Radt)+. ET.: *στενάζω*, aor. *ἐστέναξα* 'sigh deeply'. A.F.P.H.

τιναγμός, **ὁ** 'shaking'. Plutarch (*Moralia* 258c); 3rd-cent. BC attestation at *P. Cair. Zen.* iv. 787. 59 (unaccented)+. ET.: *τινάσσω*, aor. *ἐτίναξα* 'shake'. ACCENT: Arc. 65. 18. A.F.P.H.

ἁρπαγμός, **ὁ** 'robbery, rape'. New Testament (Ep. Phil. 2. 6)+. ET.: *ἁρπάζω*, aor. *ἥρπαξα* 'snatch away'. A.F.P.H.

ἀραγμός, **ὁ** 'clashing, clattering, rattling'. Aeschylus (*Th.* 249)+. ET.: *ἀράσσω*, aor. *ἤραξα* 'shake violently'. A.F.P.H.

σπαραγμός, **ὁ** 'tearing, rending'. Aeschylus (in Photius 326. 23 Porson ≈ Aeschylus in *Suda* ο 130 = Aeschylus fr. 169. 2 Radt)+. ET.: *σπαράσσω*, aor. *ἐσπάραξα* 'tear, rend'. A.F.P.H.

Also 65 further post-Homeric finally accented words (mostly abstracts) in *-γμός*. On the accent of this category, see Arc. 65. 17–21; Sch. *Il.* 20. 485a (A).

ὄγμος, **ὁ** 'furrow'. Hom. (*Il.* 11. 68+)+. ET.: Generally connected with *ἄγω* 'lead' (e.g. Frisk 1960–72: ii. 348). Skt *ájma-* m. 'march, passage' is either a cognate or a parallel creation: Frisk (1960–72: ii. 348). Risch (1974: 44) regards *ὄγμος* as a Greek creation with *o*-grade of the verbal root. An alternative to the connection with *ἄγω* is proposed by Benveniste (1962: 107–8), who compares instead Hitt. *akkala-* 'furrow', implying a root with **k* (or **k̂*), not **ĝ*. This connection is rejected by Frisk (1960–72: ii. 348) but regarded as possible by Puhvel (1984: 23). In either case, the suffix of the Greek form would be *-μο-*. ACCENT: Arc. 65. 20; Sch. *Il.* 11. 68a (A); Sch. *Il.* 20. 485a (A); Eust. 831. 61; *EM* 613. 34. Schwyzer (1953: 492 n. 10) suggests Aeolic accentuation. C.R.HOM.H.

ἰυγμός (and **ἴυγμός**), **ὁ** 'shout of joy'. Hom. (*Il.* 18. 572)+. ET.: *ἰύζω*, aor. *ἴυξα* 'shout, yell'. A.F.HOM.H.

ἆρδμός, **ὁ** 'place for animals to drink'. Hom. (*Il.* 18. 521+)+. ET.: *ἄρδω*, aor. *ἦρσα* 'water'. ACCENT: Arc. 66. 3. C.F.HOM.H.

ἄργεμον, **τό** or **ἄργεμος**, **ὁ** 'albugo, a white speck in the eye'. Hippocrates (*Loc. hom.* 13 (vi. 302. 16–17 Littré))+. ET.: Root of *ἀργός* < **H$_2$r̥ĝ-ró-s* 'shining; white'. C.R.P.L.

ἄνθεμον, **τό** 'blossom'. Sappho (in Hephaestion, *Ench.* 15. 18 and Sch. A. Heph. 159. 18 = Sappho fr. 132. 1 V.)+. ET.: **ἄνθος**, **τό** 'blossom'. C.R.P.L.

ἰᾱ́λεμος, **ὁ** (Ionic **ἰήλεμος**) 'dirge'. Pindar (*P. Oxy.* xxvi. 2447 fr. 3. a. 2 = Pindar fr. 128e. a. 2 S–M (accented), *P. Oxy.* xxvi. 2447 fr. 3. b. 6 = Pindar fr. 128e. b. 6 S–M (unaccented))+. ET.: Derivative of the interjection **ἰή**. Unusual suffixation **-λεμο-** also found in **κοᾱ́λεμος**, **ὁ** 'stupid fellow' (itself of obscure origin): Chantraine (1968–80: 452). ACCENT: Implied by Theognost. 64. 15. Accented]*νϊάλ*[on the late 2nd-cent. AD papyrus *P. Oxy.* xxvi. 2447 fr. 3. a. 2 = Pindar fr. 128e. a. 2 S–M, restored to *ὅ*]*ρθιο*⌋*ν ἰάλ*⌊*εμ*[*ον* on the basis of]*ρθιονϊαλεμ*[at *P. Oxy.* xxvi. 2447 fr. 3. b. 6 = Pindar fr. 128e. b. 6 S–M. C?.R.P.L.

ἄνεμος, **ὁ** 'wind'. Hom. (*Il.* 1. 481+)+. ET.: Skt *ániti* < **H₂enH₁ti* 'breathe' (see Mayrhofer 1986–2001: i. 72 s.v. *AN*[1]). ACCENT: Arc. 69. 9–10; *Ep. Ps.* 57. 3. C?.R.HOM.L.

δῆμος, **ὁ** (Doric **δᾶμος**) 'district, country, people'. Hom. (*Il.* 2. 198+)+. ET.: Celtic cognates include OIr *dām* 'entourage, crowd'. Original meaning 'division, part' if, as Frisk thinks probable, the word is a *mo*-derivative of a verb 'to divide' on the root of *δαίομαι* 'divide': see Frisk (1960–72: i. 381). ACCENT: Arc. 67. 14; Sch. *Il.* 8. 240a (A); Sch. *Il.* 12. 213a (A); Eust. 710. 52; Ammonius 131; Io. Phil. *Diff.* δ 7 A, δ 4 B, δ 6 C, δ 8 D, δ 5 E Daly; Theognost. 63. 6. Cf. Sch. Ar. *Eq.* 954a. C.R.HOM.H.

βλάστημος, **ὁ** 'growth'. Aeschylus (*Th.* 12, *Supp.* 318). ET.: *βλαστάνω* 'grow', sigmatic aor. *ἐβλάστησα*. ACCENT: At both *Th.* 12 and *Supp.* 318, those MSS of Aeschylus that have our word at all give it recessive accentuation (see West ad locc.). Lobeck (1837: 397) comments that either *βλαστημόν* should be read or the word was not known to Herodian and is passed over by Arc. 69. 11–14. The word would, however, be a perfect example of Arcadius' rule, and Arcadius does not profess to include all Herodian's examples (see Arc. 2. 12–15). The silence of our extant grammatical sources on this word cannot be taken as evidence for final accentuation and we are left with the MSS of Aeschylus as our only sources for the accentuation of this word. A.R.P.H.

βαθμός (and **βασμός**), **ὁ** 'step, threshold'. Septuagint (Si. 6. 36+)+. ET.: *βαίνω* 'go'. ACCENT: Arc. 66. 6. C.F.P.H.

γναθμός, **ὁ** 'jaw'. Hom. (*Il.* 13. 671+)+. ET.: Poetic doublet of *γνάθος*, **ἡ** 'jaw', perhaps on the analogy of *λαιμός*, *ὁ* 'throat', *βρεχμός*, *ὁ* 'front part of the head', etc.; see Chantraine (1968–80: 230). C.F.HOM.H.

σταθμός, **ὁ**, heteroclitic pl. **σταθμά**, **τά** 'standing-place for animals, farmstead'. Hom. (*Il.* 2. 470+)+. ET.: *ἵστημι* 'stand'; see Frisk (1960–72: ii. 775). Formation like that of *βαθμός*, *ὁ* 'step, threshold'. ACCENT:

Arc. 66. 6; Eust. 582. 17; Sch. *Il.* 5. 557 (h(Ge)), quoted by Erbse (1969–88: ii. 80). C.F.Hom.H.

σταθμόν, ***τό*** 'weight; standard weight kept under public authority'. Gorgias (fr. B 11a. 30. 8 D–K)+. Et.: *ἵστημι* 'stand'; see Frisk (1960–72: ii. 775). A/C.F.P.H.

ἠθμός/ἠθμός, ***ὁ*** 'strainer, colander'. Euripides (in Pollux 10. 108 = Euripides fr. 374. 2 Nauck)+; earlier inscriptional attestation at *SIG*^{3} 2. A 8, B 4–5 (Sigeum, 6th cent. BC). Et.: *ἤθω* and *ἠθέω* 'sift, strain'. C.F.P.H.

μελεδηθμός, ***ὁ*** 'practice, exercise'. Oracle (140. 12 Cougny. Possibly 2nd cent. AD: see Cougny ad loc.). Et.: *μελεδαίνω* 'care for'. A.F.P.H.

Also 22 further post-Homeric finally accented words (mostly abstracts) in *-θμός*. On the accent of this category, see Arc. 66. 5–7; Eust. 582. 15–18; Sch. *Il.* 5. 557 (h(Ge)), quoted by Erbse (1969–88: ii. 80).

κνυζηθμός, ***ὁ*** 'whining, whimpering'. Hom. (*Od.* 16. 163)+. Et.: *κνυζέομαι* 'whine, whimper'. A.F.Hom.H.

ἑλκηθμός, ***ὁ*** 'being carried off, violence suffered'. Hom. (*Il.* 6. 465). Et.: *ἕλκω* and *ἑλκέω* 'drag about, tear asunder'. A.F.Hom.H.

μῡκηθμός, ***ὁ*** 'lowing, bellowing'. Hom. (*Il.* 18. 575+)+. Et.: *μῡκάομαι* 'low, bellow'. A?.F.Hom.H.

κηληθμός, ***ὁ*** 'rapture, enchantment'. Hom. (*Od.* 11. 334+). Et.: *κηλέω* 'charm, bewitch, beguile'. A.F.Hom.H.

ὀρχηθμός, ***ὁ*** 'dance'. Hom. (*Il.* 13. 637+)+. Et.: *ὀρχέομαι* 'dance'. A.F.Hom.H.

μηνιθμός, ***ὁ*** 'wrath'. Hom. (*Il.* 16. 62+). Et.: *μηνίω* 'cherish wrath, be wroth against'. Accent: Eust. 582. 16; Sch. *Il.* 5. 557 (h(Ge)), quoted by Erbse (1969–88: ii. 80). A.F.Hom.H.

ἀριθμός, ***ὁ*** 'number'. Hom. (*Od.* 4. 451+)+. Et.: Derivative on the root *ἀρι-* attested in the privative compound *νήριτος* 'countless'; see Frisk (1960–72: i. 139). A.F.Hom.H.

πορθμός, ***ὁ*** 'ferry, place crossed by a ferry, strait'. Hom. (*Od.* 4. 671+)+. Et.: *πείρω* 'pierce, run through,' aor. *ἔπειρα*, aor. pass. *ἐπάρην*. Accent: Eust. 582. 16; Sch. *Il.* 5. 557 (h(Ge)), quoted by Erbse (1969–88: ii. 80). C.F.Hom.H.

κλαυθμός, ***ὁ*** 'weeping, wailing'. Hom. (*Il.* 24. 717+)+. Et.: *κλαίω* 'cry, wail, lament,' aor. *ἔκλαυσα*. A.F.Hom.H.

κευθμός, ***ὁ*** 'hiding-place, hole'. Hom. (*Il.* 13. 28)+. Et.: *κεύθω* 'cover, hide', aor. *ἔκευσα*. C.F.Hom.H.

λαιμός, ***ὁ*** 'throat, gullet'. Hom. (*Il.* 13. 388+)+. Et.: Same root as *λαῖτμα*, gen. *-ατος* 'depth, gulf'. No plausible comparison outside Greek; see Chantraine (1968–80: 614). Accent: Arc. 68. 14; *Ep. Ps.* 27. 34. C.F.Hom.H.

δεῖμος, ***ὁ*** 'fear, terror'. Chrysippus (in Galen 5. 404. 17)+; attested as a personification from Homer (*Il.* 4. 440+) onwards. Et.: *δείδω* 'fear'

(originally perf. in pres. sense), δεῖμα, gen. -ατος 'fear'. ACCENT: Arc. (68. 15) apparently prescribes recessive accentuation. Schmidt prints Δεῖμος, and LSJ assume that δειμός is finally accented when not personified, but I can find no evidence for this assumption. At Galen 5. 404. 17, δειμῶν is a correction by Kühn for δείμων: see De Lacy, *CMG*: v. iv. i. ii. 270 n. on line 34. Niese prints δεῖμόν τινα at Josephus, *Ap.* 2. 248. Elsewhere, Δεῖμος is always personified, and recessive accentuation is usually found in printed texts. A.R.P.H.

οἶμος/οἴμος, ὁ/ἡ 'way, road, path; song'. Hom. (*Il.* 11. 24)+. ET.: Traditionally connected with εἶμι 'I shall go', but the form οἶμος, as well as the initial aspirate of the related φροίμιον < **pro-hoimion* 'opening, prelude', is not consistent with derivation from the root of εἶμι. Derivation from **Fοῖμος*, on the root of ἵεμαι 'set oneself in motion', has been suggested; see Frisk (1960–72: ii. 363), with bibliography. A more attractive suggestion, at least for the meaning 'song', is connection with Hitt. *išḫamai-* 'song, melody'. For the Gk form Puhvel (1984: 395, with earlier bibligraphy) reconstructs either **sH₂-om-i̯-o-* or **sH₂-oi̯-mo-* (in his terms, **sE₂-om-y-o-* or **sE₂-oi̯-mo-*). Hitt. *išḫamai-* 'song, melody' would involve the form of the root with *m*-extension. For the possibility of a root **sH₂* with *i̯*-extension, Puhvel compares Skt *syáti* 'bind', Hitt. *išḫiya-* 'bind, wrap', ON *seiðr* 'line, rope' < **sH₂oi̯-to-*. ACCENT: Arc. 68. 15; Sch. *Il.* 11. 24b (A); Eust. 828. 16; *Ep. Ps.* 28. 1. C.R.HOM.H.

λοιμός, ὁ 'plague'. Hom. (*Il.* 1. 61)+. ET.: Connection with λῑμός, ὁ/ἡ 'hunger, famine' is generally accepted, despite the difficulty of explaining an alternation *-oi-/-ī-*: see Chantraine (1968–80: 641). Comparanda outside Gk include Lith. *líesas* 'thin-legged', *leĩnas* 'thin'. ACCENT: Arc. 68. 14; *Ep. Ps.* 27. 32. A?.F.HOM.H.

ἀλοιμός, ὁ 'polishing; plastering'. Sophocles (in *Et. Gen.* α 524 L–L and *EM* 69. 42 = Sophocles fr. 69 Radt). ET.: ἀλείφω 'daub, plaster, besmear'; cf. ἀλοιφή 'hog's lard, grease; unguent'. ACCENT: Theognost. 65. 2. A.F.P.H.

ἰνδαλμός, ὁ 'form, appearance'. Hippocrates (*Ep.* 18 (ix. 380. 18 Littré)) +. ET.: ἰνδάλλομαι 'appear, seem'. ACCENT: Arc. 67. 1; *Ep. Ps.* 1. 27. A.F.P.H.

ὀφθαλμός, ὁ 'eye'. Hom. (*Il.* 1. 587+)+. ET.: Cf. Boeotian ὄκταλλος, ὁ 'eye'. ACCENT: Arc. 66. 24; *Ep. Ps.* 1. 27. C.F.HOM.H.

σκαλμός, ὁ *pin or thole to which the oar was fastened*. *Homeric Hymns* (7. 42)+. ET.: Built on the root of σκάλλω 'stir up, hoe'; see Frisk (1960–72: ii. 716). C.F.P.H.

παλμός, ὁ 'quivering motion'. Hippocrates (*Mul.* 1. 25 (viii. 66. 11 Littré)+)+. ET.: πάλλω 'brandish, quiver'. ACCENT: Arc. 67. 1. A.F.P.H.

ψαλμός, ὁ 'twitching or twanging with the fingers'. Aeschylus (in Strabo 10. 3. 16 = Aeschylus fr. 57. 7 Radt)+. ET.: *ψάλλω* 'pluck, pull, twitch'. ACCENT: Arc. 67. 1; *Ep. Ps.* 1. 25. A.F.P.H.

ποικιλμός, ὁ 'elaboration, refinement'. Epicurus (in Plutarch, *Moralia* 1088c = Epicurus fr. 197. 7 Arrighetti)+. ET.: *ποικίλλω* 'work in various colours, work in embroidery'. A.F.P.H.

τιλμός, ὁ 'plucking or pulling out (of hair)'. Aeschylus (*Supp.* 839)+. ET.: *τίλλω* 'pluck out (one's hair)'. ACCENT: Arc. 67. 1; *Ep. Ps.* 1. 27. A.F.P.H.

ὅλμος/ὄλμος, ὁ 'round smooth stone; mortar'. Hom. (*Il.* 11. 147)+. ET.: *εἰλέω* 'roll up'. See Frisk (1960–72: ii. 379). ACCENT: Eust. 831. 61; *Ep. Ps.* 1. 28. C.R.HOM.H.

στολμός, ὁ 'equipment, raiment'. Aeschylus (*Ch.* 29+)+. ET.: *στέλλω* 'make ready'. A/C.F.P.H.

σκυλμός, ὁ 'rending, mangling'. Septuagint (3 Ma. 3. 25+)+. ET.: *σκύλλω* 'tear or rend apart'. A.F.P.H.

θλιμμός, ὁ 'pressure'. Septuagint (Ex. 3. 9+). ET.: *θλίβω* 'squeeze, chafe'. ACCENT: Arc. 67. 6. A.F.P.H.

τριμμός, ὁ 'beaten track'. Xenophon (*Cyn.* 3. 7+). ET.: *τρίβω* 'rub'. ACCENT: Arc. 67. 5–6. C.F.P.H.

κομμός, ὁ 'striking'. Aeschylus (*Ch.* 423)+. ET.: *κόπτω* 'strike'. ACCENT: Eust. 1746. 29. A.F.P.H.

ἁρμός, ὁ 'joint, joining (in masonry); bolt, peg; joint (in the body)'. Euripides (*Hipp.* 809+)+. ET.: *ἀραρίσκω* 'fit together'. A/C.F.P.H.

καθαρμός, ὁ 'cleansing'. Aeschylus (*Th.* 738+)+. ET.: *καθαίρω*, aor. *ἐκάθηρα* 'cleanse'. A.F.P.H.

πταρμός, ὁ 'sneezing'. Thucydides (2. 49. 3)+. ET.: *πταίρω*, aor. *ἔπταρον* 'sneeze'. A.F.P.H.

ἀγερμός, ὁ 'collecting of money for the service of the gods; call-to-arms (of the Greeks against Troy)'. Aristotle (*Po.* 1451^{a} 27)+. ET.: *ἀγείρω*, aor. *ἤγειρα* 'gather together'. A.F.P.H.

θέρμος, ὁ 'lupine'. Alexis (in Athenaeus 2. 55a = Alexis fr. 167. 11 K–A) +. ET.: Likely to be a substantivization of the adjective *θερμός* 'warm', built on the root of *θέρομαι* 'become warm', *θέρος*, *τό* 'summer'. C.R.P.H.

εἱρμός, ὁ 'series, sequence'. Aristotle (*Pr.* 916^{a}31)+. ET.: *εἴρω* 'fasten together in rows'. A.F.P.H.

οἰκτιρμός, ὁ 'pity, compassion'. Pindar (*P.* 1. 85)+. ET.: *οἰκτίρω* 'pity'. A.F.P.H.

ὅρμος, ὁ 'cord, chain'. Hom. (*Il.* 1. 435+)+. ET.: *εἴρω* 'tie, join', Lat. *sero* 'join or bind together'. ACCENT: Eust. (1788. 47) reports that some in later times accented the word on the final syllable in the meaning 'woman's ornament', to distinguish this from the sort of *ὅρμος* found in a harbour (cf. Eust. 1967. 29), and such a doctrine is indeed found at Sch.

Luc. 278. 1–3. Göttling (1835: 192) notes that final accentuation is actually found in the MSS of Nonnus, e.g. *Dionysiaca* 5. 144, 5. 580 (see Chuvin ad locc.). But, as Göttling notes, *ὅρμος* is the usual accentuation found in manuscripts for both meanings. Recessive accentuation is presupposed by Sch. *Il.* 20. 485a (A). C.R.HOM.H.

κορμός, ***ὁ*** 'trunk or stock of a tree'. Hom. (*Od.* 23. 196)+. ET.: *κείρω* 'cut short, shear, clip'. ACCENT: Sch. *Il.* 24. 316a[1] (A); Eust. 1352. 18; *EM* 591. 30. C.F.HOM.H.

τόρμος, ***ὁ*** 'hole, socket'. Herodotus (4. 72. 5)+. ET.: *τείρω* 'wear down'. C.R.P.H.

φορμός, ***ὁ*** 'basket for carrying corn, etc.'. Hesiod (*Op.* 482)+. ET.: *φέρω* 'bear, carry'. ACCENT: Sch. *Il.* 24. 316a[1] (A); Eust. 1352. 18; *EM* 591. 30. C.F.P.H.

ἀγυρμός, ***ὁ*** 'gathering, crowd'. Dion. Hal. (*Antiq. Rom.* 2. 19. 2)+. ET.: Root of *ἀγείρω* 'gather together'. On the vocalism see Schwyzer (1953: 351). A/C.F.P.H.

ὀδυρμός, ***ὁ*** 'lamentation'. Aeschylus (*Pr.* 33)+. ET.: *ὀδύρομαι* 'lament'. A.F.P.H.

συρμός, ***ὁ*** 'sweeping motion'. (Ps.-)Plato (*Ax.* 370c)+. ET.: *σύρω* 'draw, drag, trail along'. A.F.P.H.

φυρμός, ***ὁ*** 'mixture, confused mass'. Diod. Sic. (18. 30. 5+)+. ET.: *φύρω* 'mix dry with wet; jumble together'. A.F.P.H.

ὀλοφυρμός, ***ὁ*** 'lamentation'. Thucydides (3. 67. 2+)+. ET.: *ὀλοφύρομαι* 'lament'. A.F.P.H.

ἀασμός, ***ὁ*** 'breathing, expiration'. Aristotle (*Pr.* 964[a]18). ET.: *ἀάζω* 'breathe with the mouth wide open'. A.F.P.H.

Also 606 further post-Homeric finally accented words (mostly abstracts) in *-σμός*. On the accent of this category, see Arc. 66. 14–22; Sch. *Il.* 15. 607a (A); Eust. 1033. 9; *Ep. Ps.* 76. 6–7.

δασμός, ***ὁ*** 'division of spoil'. Hom. (*Il.* 1. 166)+. ET.: *δατέομαι*, aor. *ἐδασάμην* 'divide among oneselves'. ACCENT: Arc. 66. 17. A.F.HOM.H.

δεσμός, ***ὁ*** (and heteroclitic pl. ***δεσμά***, ***τά***) 'band, bond'. Hom. (*Il.* 1. 401+) +. ET.: *δέω* 'bind, tie, fetter'. ACCENT: Arc. 66. 17; *Ep. Ps.* 76. 7. C.F.HOM.H.

θεσμός, ***ὁ*** 'that which is laid down, law, ordinance'. Hom. (*Od.* 23. 296) +. ET.: Root of *τίθημι* 'set, put, place', aor. *ἔθηκα*. ACCENT: Arc. 66. 17. A?.F.HOM.H.

κλισμός, ***ὁ*** 'couch'. Hom. (*Il.* 8. 436+)+. ET.: *κλίνω*, aor. *ἔκλῑνα* 'cause to lean'. C.F.HOM.H.

ἀφλοισμός, ***ὁ*** 'foaming at the mouth'. Hom. (*Il.* 15. 607)+. ET.: *πεφλοιδέναι· φλυκταινοῦσθαι* 'have blisters' (Hesychius *π* 2115

Schmidt); ἔφλιδεν· διέρρεεν· ἐρρήγνυεν ('flowed through, burst'; Hesychius ε 7504 Latte). ACCENT: Sch. *Il.* 15. 607a (A) prescribes final accentuation (so also Eust. 1033. 9) but reports that Tyrannio mistakenly gave the word a recessive accent (= Tyrannio fr. 39 Haas). It appears that he derived the word from φλέω and φλύω, via φλοισμός, and thought that since Herodian stated that words of more than two syllables ending in -σμος were finally accented, this word should not be finally accented since it was derived by the addition of ἀ- from a word of only two syllables. However, there was no Herodianic rule stating the converse of the rule in question, i.e. stating that words of only two syllables ending in -σμος are recessive. Indeed Arc. (66. 14–22) preserves a general rule, applying to disyllables as well as polysyllables, that common simplex nouns in -σμος are finally accented unless the -σ- is directly preceded by -ο-. The MSS of Arc. 70. 6 prescribe final accentuation for ἀφλοισμός, but the word does not fit the context (see Schmidt ad loc.). We may, however, take ἀφλοισμός to have been finally accented, given the likelihood that Tyrannio's recessive accent was simply due to incorrect reasoning. Cf. Haas (1977: 147). A.F.HOM.H.

κόσμος, ὁ 'order; ornament; ruler (title of chief magistrate on Crete)'. Hom. (*Il.* 2. 214+)+. ET.: Haebler (1967) argues for an old verbal root *$\hat{k}es$ 'set in order'. ACCENT: Arc. 66. 20; *EM* 532. 10 (implied). A/C.R.HOM.H.

θρωσμός, ὁ 'springing; ground rising from the plain'. Hom. (*Il.* 10. 160+) +. ET.: θρώσκω 'leap, spring'. A/C.F.HOM.H.

ἄ̓τμός, ὁ 'steam, vapour'. Aeschylus (*A.* 1311+)+. ET.: Contracted from ἀετμός (cf. Hesychius' ἀετμόν· τὸ πνεῦμα ('wind'; Hesychius α 1423 Latte)) and related to ἄελλα, ἠΰ 'stormy wind' and ἄημι 'blow'; see Frisk (1960–72: i. 180). It is necessary to assume an unusual complex suffix -τ-μο-, but cf. the parallels for -τμο- and -τμη < *-τμᾱ adduced by Schwyzer (1953: 493). ACCENT: Arc. 66. 13. C.F.P.H.

ἐ̓ρετμόν, τό and **ἐ̓ρετμός**, ὁ 'oar'. Hom. (*Il.* 1. 435+)+. ET.: Root of ἐρέσσω 'row'; see Frisk (1960–72: i. 553). For the complex suffix -τ-μο- cf. ἄ̓τμός above. ACCENT: Lentz (1867–70: i. 378. 27) reconstructs ἐ̓ρετμόν for Herodian on the basis of *Ep. Hom. alph.* κ 150. Strictly, however, the latter passage only says that ἐ̓ρετμόν has the same accentuation as the masculine variant ἐ̓ρετμός, without pronouncing on the actual position of the accent. C.F.HOM.H.

πότμος, ὁ 'that which befalls one, lot, destiny'. Hom. (*Il.* 2. 359+)+. ET.: πίπτω 'fall'. ACCENT: Arc. 66. 12. A.R.HOM.H.

θύμον, τό and **θύμος**, ὁ 'thyme'. Pherecrates (in Photius 524. 2 Porson = Pherecrates fr. 177 K–A)+. ET.: θύω 'offer by burning'; see Strömberg (1940: 27); Frisk (1960–72: i. 693). ACCENT: Arc. 68. 4–5; Sch. vet. Ar. *Pl.* 253f; Tz. Ar. *Pl.* 253d. C.R.P.L.

θῡμός, **ὁ** 'soul, spirit'. Hom. (*Il.* 1. 24+)+. ET.: Either connected to Lat. *fūmus*, Ved. *dhūmá-* m. 'smoke' and related to *θύω* 'offer by burning', or formed to *θύω* 'rage' (so Ernout and Meillet 1979: 260 s.v. *fūmus*). ACCENT: Arc. 68. 4; Hrd. διχρ. 19. 9; Sch. vet. Ar. *Pl.* 253f; Tz. Ar. *Pl.* 253d; *Ep. Ps.* 81. 28. A.F.HOM.H.

ῥῡμός, **ὁ** 'chariot-pole'. Hom. (*Il.* 5. 729+)+. ET.: *ἐρύω* 'drag, draw'. ACCENT: Arc. 68. 4, 70. 2; Hrd. διχρ. 19. 9; *Ep. Ps.* 81. 28. C.F.HOM.H.

δρῡμός, **ὁ**, Homeric pl. **δρῡμά**/**δρυμά** (but see below under 'ACCENT'), **τά** 'copse, thicket'. Hom. (*Il.* 11. 118+)+. ET.: Cf. δρῦς, gen. δρυός 'tree'. ACCENT: Arc. 68. 5–6; Hrd. διχρ. 19. 9; *Ep. Ps.* 81. 28. *EM* (96. 9) prescribes a recessive accent for the neuter plural δρύμα, while allowing that others read δρυμά. C.F.HOM.H.

κρῡμός, **ὁ** 'icy cold, frost'. Herodotus (4. 8. 3+)+. ET.: Suffix originally **-smo-* (Schwyzer 1953: 492). Cf. *κρύος*, *τό* 'icy cold, frost', *κρυόομαι* 'be icy cold'. ACCENT: Arc. 68. 4; *Ep. Ps.* 81. 30. C.F.P.H.

χῡμός, **ὁ** 'flavour'. Hippocrates (*VM* 14 (i. 604. 2 Littré)+)+. ET.: Suffix originally **-smo-* (Schwyzer 1953: 492). Root of *χέω* < **χέϝω* 'pour'. ACCENT: Arc. 68. 4; Hrd. διχρ. 19. 9; *Ep. Ps.* 81. 28; Tz. Ar. *Pl.* 253d. A?.F.P.H.

λαχμός, **ὁ** 'kicking'. Antimachus (in *Et. Gen.* λ 48 Adler-Alpers and *EM* 558. 26 = Antimachus fr. 101 Wyss). ET.: Root of *λάξ* 'with the foot'; see Frisk (1960–72: ii. 82). A.F.P.H.

βρεχμός, **ὁ** 'front part of the head'. Hom. (*Il.* 5. 586)+. ET.: On structural grounds probably a derivative in *-μο-*, although the base word is uncertain. Frisk (1960–72: i. 267) enumerates various suggestions. C.F.HOM.H.

ληχμός, **ὁ** 'cessation'. Antimachus (in *Et. Gen.* and *EM* 371. 23 = Antimachus fr. 111 Wyss). ET.: *λήγω* 'cease'. A.F.P.H.

ὄχμος, **ὁ** 'fortress'. Lycophron (*Al.* 443). ET.: *ἔχω* 'have, hold'. C.R.P.H.

πλοχμός, **ὁ** 'lock, braid of hair'. Hom. (*Il.* 17. 52)+. ET.: Probably from **πλοκ-σμο-*, but cf. Vendryes (1932). Root of *πλέκω* 'plait or make by plaiting, twine'. ACCENT: Sch. *Il.* 12. 148a[1] (A). C.F.HOM.H.

αὐχμός, **ὁ** 'drought'. Empedocles (in Diog. Laert. 8. 59 = Empedocles fr. B 111. 6, 7 D–K)+. ET.: *αὖος* 'dry'. The complex suffix *-χμο-* is unusual as an independent suffix; Schwyzer (1953: 493 n. 4) calls the word 'unerklärt'. ACCENT: Arc. 66. 6; Sch. *Il.* 12. 148a[1] (A). A.F.P.H.

μυχμός, **ὁ** 'moaning, groaning'. Hom. (*Od.* 24. 416). ET.: *μύζω*, aor. *ἔμυξα* 'make the sound *μὺ μῦ*, mutter, moan'. A.F.HOM.H.

ἀμυχμός, **ὁ** 'scratching, laceration'. Theocritus (24. 126). ET.: *ἀμύσσω*, aor. *ἤμυξα* 'scratch, tear'. A.F.P.H.

ἴωχμός, **ὁ** 'rout, pursuit'. Hom. (*Il.* 8. 89+)+. ET.: *ἰωκαί· διώξεις. ὁρμαί* ('pursuits, onrushes'; Hesychius ι 1188 Latte); *Ϝιώκω* = *διώκω* 'pursue': *GDI* 3153 (Corinthian vase). ACCENT: Sch. *Il.* 12. 148a[1] (A). A.F.HOM.H.

ῥωχμός (also written **ῥωγμός**, **ῥοχμός**, **ῥογμός**), **ὁ** 'wheezing'. Aretaeus (1. 6. 6+)+. ET.: *ῥώχω* 'wheeze'. A.F.P.H.

ῥωχμός or **ῥωγμός**, **ὁ** 'cleft'. Hom. (*Il.* 23. 420)+. ET.: *ῥώχειν· βρύχειν τοῖς ὀδοῦσι* ('snap with the teeth'; Hesychius ρ 597 Schmidt). C.F.HOM.H.

βωμός, **ὁ** 'raised platform, stand; altar'. Hom. (*Il.* 1. 440+)+. ET.: *βαίνω*, aor. *ἔβη* 'walk, step'. ACCENT: Arc. 68. 9; *Ep. Ps.* 96. 17 (suggesting that the word is finally accented in only one of its meanings); Tz. Ar. *Pl.* 253d. Final accent presupposed by Sch. *Il.* 8. 441b[1] (A). C.F.HOM.H.

ζωμός, **ὁ** 'soup, sauce'. Aristophanes (*Pax* 716+)+. ET.: *ζύμη* 'leaven'; see Schwyzer (1953: 492). ACCENT: Arc. 68. 9; *Et. Gud.* 579. 28–9; *EM* 822. 30; Tz. Ar. *Pl.* 253d. C.F.P.H.

θωμός, **ὁ** 'heap'. Aeschylus (*A.* 295)+. ET.: Root of *τίθημι*, aor. *ἔθηκα* 'put'. ACCENT: Arc. 68. 9. At Aeschylus, *A.* 295, MS 'M' has *θῶμὸν* (see West ad loc.), but this is obviously an aberration. C?.F.P.H.

μῶμος, **ὁ** 'blame, reproach, disgrace; blemish'. Hom. (*Od.* 2. 86)+. ET.: Related to *ἀμῦμων* 'blameless'. Risch (1974: 45) tentatively reconstructs a root **mēu/mōu/mū*. ACCENT: Arc. 68. 10; Sch. *Il.* 3. 35b[1] (A), b[2] (b(BCE[3])T). A/C.R.HOM.H.

βρωμός/**βρῶμος**, **ὁ** 'food'. Aratus (1021). ET.: *βιβρώσκω*, aor. *ἔβρωσα*, epic aor. *ἔβρων* 'eat, eat up'. ACCENT: Recessive accent prescribed at Arc. 68. 11 for a personal name *Βρῶμος*, but see Schmidt ad loc. Martin prints *βρώμοιο* at Aratus 1021 and notes manuscript variation between *βρώμοιο* and *βρωμοῖο* (as well as the aberrant readings *βρώμοῖο* and *βρωμάοῖο* (*sic*)). C.U.P.H.

ψωμός, **ὁ** 'morsel, bit'. Hom. (*Od.* 9. 374)+. ET.: Cf. *ψῆν* (pres. inf. act.) 'rub, wipe'. ACCENT: Arc. 68. 9; *Et. Gud.* 579. 29. C.F.HOM.H.

Examples of excluded words: *δαγμός* (only used by Rufus in Aetius 3. 159. 42 = Rufus fr. 64. 20 D–R, where *δηγμούς* is suggested by Daremberg and Ruelle and printed by Olivieri); *ψάμμος* (etymology and internal structure unclear; see Frisk (1960–72: ii. 1130)); *ἀχυρμός* (only exists as a conjecture by Dindorf at Aristophanes, *V.* 1310).

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GLOSSARY OF TECHNICAL TERMS

athematic not **thematic**.

Bartoli's law the name given to an accent shift that retracted the accent from a long vowel in a final syllable onto a **light** penultimate **syllable** in words of more than two syllables, as in δεσπότης from *δεσποτής. The period and dialect or dialects at which this change operated are disputed (see p. 88).

Caland suffix one of a set of Indo-European suffixes characterized by their propensity to form derivatives on the same **roots** as each other. See p. 155.

complex Caland suffix a **complex suffix** both of whose elements are **Caland suffixes**.

complex suffix a **suffix** that was in origin analysable into two separate **suffixes**. For example, it is argued on pp. 270–6 that the Greek adjective-of-material suffix *-ινο-* was originally analysable as a suffix *-ι-* plus a suffix *-νο-*, in other words that *-ινο-* is a complex suffix.

compound a word that contains more than one **root**. The word φιλόσοφος is a compound; it contains the **roots** *φιλ-* and *σοφ-*.

default accentuation a concept belonging to a rule-based model of grammar. The accent that the rule-system of a language assigns to a word none of whose **morphemes** is **inherently accented** (or none of whose **inherently accented morphemes** is allowed by the rule-system of the language to appear in the **surface form**). For ancient Greek, **recessive** accentuation is the most broadly or generally regular pattern of accentuation or, in a rule-based conception, the default accentuation (see pp. 128–44).

demorphologization a process whereby a word **stem** that was originally analysable into component parts (for example, a **stem** containing one or more **derivational suffixes**) ceases to be analysed synchronically as consisting of component parts; from a synchronic point of view it comes to be treated simply as an unanalysed **stem**, in other words a **root**.

derivation (i) the aspect of word-formation that creates **stems** to which inflectional suffixes can be added; see **derivational suffix**. (ii) In a rule-based model of grammar, the process of arriving at the form of a word that is actually uttered, the **surface form**, from a basic mental representation or **underlying form**. For example, the plural of English *cat* might be derived from underlying *cat* + *z* (i.e. a basic or underlying form of the **root** *cat* plus a basic or underlying

form of the English plural marker) by means of the following derivation:

Underlying form: *cat* + *z*
Rule I: the vowel [ɪ]is inserted between a sibilant (does not apply) and *z* (as in *fishes*)
Rule II: *z* is devoiced to *s* after a voiceless consonant *cats*
Surface form: *cats*

derivational suffix a suffix appearing after the **root** of a word or after another derivational suffix and to which an **inflectional suffix** must be added before the word is complete. For example, the *-υ-* and *-ρο-* of *λιγυρός* are derivational suffixes.

endocentric a term used of processes whereby one word is formed from another with no change in grammatical category or clear semantic change. See p. 279.

finally accented having the accent on the final syllable (as *λιγυρός*, *λιγυρούς*, *λιγυροῦ*).

heavy syllable in ancient Greek, a syllable containing a long vowel or a diphthong, and/or ending in a consonant. A heavy syllable 'scans long' in poetry. (The first of two or more consecutive consonants always belongs to the same syllable as the preceding vowel in Greek except in the case of clusters of **stop** plus **nasal** or **liquid consonant**, when the first consonant sometimes belongs to the following syllable.) The syllables of the word *μιμνήσκω* are *μιμ*, *νήσ*, and *κω*. All three are heavy, *μιμ* because it ends in a consonant (although it has a short vowel), *νήσ* both because it has a long vowel and because it ends in a consonant, and *κω* because it has a long vowel. The last syllable of a word such as *φίλος*, with a short vowel followed by a single consonant, is heavy if the following word begins with a consonant but **light** if the following word begins with a vowel, but the rules of Greek accentuation simply treat such syllables as **light**. See also **light syllable**.

inflectional suffix a **suffix** serving to distinguish grammatical categories such as case, number, person, gender, tense, voice, mood, and so on. Inflectional suffixes correspond to the part of the word traditionally known as the 'ending'. For example, the *-ός* of *λιγυρός* is the inflectional suffix. (For the idea that the *-ο-* here belongs both to the inflectional suffix and to the **derivational suffix** *-ρο-*, see pp. 9–10.)

inherently accented a concept belonging to a rule-based model of grammar. A **morpheme** is inherently accented if it contributes an accent to the **underlying form** of a word. For example, in Steriade's (1988) model of Greek accentuation the suffixes *-υ-* and *-ρο-* are both inherently accented, so that the underlying form of the word *λιγύς* is

λιγύς and that of λιγυρός is λιγύρός. During the course of the word's **derivation** (see **derivation** (ii)), the inherent accent nearest to the end of the word is kept and other inherent accents are eliminated, so that the **surface forms** are λιγύς and λιγυρός.

intermediate accentuation a word accent that falls neither on the final syllable nor in the position for **recessive** accentuation, but on the syllable between the one that would carry the **recessive** accent and the final syllable of the word (as ποικίλος, σωτῆρα). Intermediate accentuation is a possibility only in words of three or more syllables with a **light** final **syllable**.

law of limitation the set of restrictions limiting how far from the end of the word the Greek accent may be: (*a*) an acute accent may not fall further from the end of the word than the antepenultimate syllable (λεγόμενος is possible but **λέγομενος is not); (*b*) a circumflex may not fall further from the end of a word than the penultimate syllable (σωτῆρα is possible but **σώτηρα is not); (*c*) if the final syllable contains a long vowel or is closed by a consonant cluster, no accent may fall further from the end of the word than the penultimate syllable (λεγομένου and ποιμφόλυξ are possible but **λεγόμενου and **πόμφολυξ are not); (*d*) if the final syllable contains a long vowel, a circumflex may fall only on the final syllable (λιγυροῦ and ἀνθρώπου are possible but *ἀνθρῶπου is not). The law of limitation applies in all Greek dialects for which there is evidence, with the probable exception of Thessalian (see pp. 73–4).

lexically accented = inherently accented.

lexicon in a rule-based model of grammar, the speaker's store of basic or **underlying forms**. (See **derivation** (ii).)

light syllable a syllable containing a short vowel and not ending in a consonant. A light syllable scans 'short' in poetry. (A single consonant does not end a syllable in Greek, but the first consonant of a consonant cluster usually does. The first consonant of a cluster sometimes belongs to the following syllable, however, if the cluster consists of a **stop consonant** followed by a **nasal** or **liquid**.) The syllables of the word τίθετε are τί, θε, and τε. All three are light, since all three contain a short vowel and none ends in a consonant. The syllables of πατρί are either πατ, ρί or πα, τρί (since τρ is a cluster of **stop** plus **liquid consonant** and the **stop** can therefore belong to the following syllable). In the first case the first syllable is **heavy** and the second light; in the second case both syllables are light. (In fact the last syllable in a word such as τίθετε or πατρί may end in a consonant if the next word begins with a consonant cluster, but this fact is never relevant for Greek accentuation.) See also **heavy syllable**.

liquid consonant in ancient Greek, one of the consonants ρ, λ.

mora the space of time occupied by a short vowel, or by half of a long vowel.

morpheme a minimal significant element in the structure of a word; a root, prefix, or suffix. For some discussion of the status of the morpheme as a linguistic unit, see pp. 308–10.

morphology the aspects of a language pertaining to the internal structures of its words, or the study of word structure in languages in general.

nasal consonant in ancient Greek, one of the consonants *μ*, *ν*. Also *γ* (pronounced ŋ) when it appears before *γ*, *κ*, or *χ*.

oxytone having an acute accent on the final syllable (as *λιγυρός*).

paroxytone having an acute accent on the penultimate syllable (as *πατέρα*, *λεγομένου*).

perispomenon having a circumflex on the final syllable (as *λιγυροῦ*).

phoneme one of the minimal units of sound that contrast with each other in a particular language to produce the differences between different words. For example, [t] (written *τ*) and [t^h] (written *θ*) are separate phonemes of ancient Greek, since the contrast between them is significant for identifying words (note the distinct words *στένω* and *σθένω*).

phonology the sound system of a language, or the study of the sound system, or the study or modelling of linguistic sound systems in general.

proparoxytone having an acute on the antepenultimate syllable (as *λεγόμενος*, *ἄνθρωπος*).

properispomenon having a circumflex on the penultimate syllable (as *σωτῆρα*).

recessive having the accent as far from the end of the word as the **law of limitation** allows (as *λεγομένου*, *λεγόμενος*, *ἄνθρωπος*).

root a **stem** that is not further analysable (e.g. the *cat* of English *cats*, or the *ἀγ-* of *ἀγρός*; but not the *ἀγρό-* of *ἀγρός*, which is further analysable into the **root** *ἀγ-* plus the **suffix** *-ρό-*).

simplex (pl. **simplicia)** a word that contains only one **root**, i.e. a word that is not a **compound**. The words *φίλος*, *σοφός*, and *λιγυρός* are simplicia; the only **roots** they contain are *φιλ-*, *σοφ-*, and *λιγ-*.

stem any word base to which suffixes or prefixes may be added (e.g. the *ἀγ-* or the *ἀγρό-* of *ἀγρός*). Note that a **root** is a special type of **stem**.

stop consonant in ancient Greek, one of the consonants *π*, *τ*, *κ*, *β*, *δ*, *γ*, *φ*, *θ*, *χ*.

suffix any significant element of a word's structure occurring after the **root** (or the last root element, in the case of a **compound**). A suffix may be a **derivational suffix** or an **inflectional suffix**.

surface form see **derivation**.

***σωτῆρα* rule** the rule stating that an accent on a long vowel in a penultimate syllable must be a circumflex if the vowel of the final syllable is short (*σωτῆρα* is possible but ***σωτήρα* is not). The *σωτῆρα* rule applied in Attic-Ionic and the Koine but not in Doric, and possibly not in Boeotian (see pp. 71, 73). For Lesbian the rule is irrelevant, since the consistent recessive accentuation of Lesbian would in any case prevent any violation of the rule from occurring.

text frequency = token frequency.

thematic an Indo-European noun, adjective, or verb paradigm is classified as thematic if its **stem** terminates in *-*ĕ*- in alternation with *-*ŏ*-. (This alternating stem-final vowel is known as the 'thematic vowel'.) Noun, adjective, and verb paradigms in Indo-European daughter languages are classified as thematic if they derive from thematic paradigms of Indo-European. The thematic noun and adjective paradigms of Greek are those following the second declension.

thematization a process of transference from an **athematic** to a **thematic** paradigm.

token frequency the frequency with which a particular word is used in a given written or spoken corpus. For ancient Greek, token frequency is necessarily counted using a written corpus of text.

underlying form (or **underlying representation)** see **derivation** (ii).

underlyingly accented = **inherently accented**.

Vendryes's law the name given to an essentially Attic accent shift that may have occurred as late as the fourth century BC. The change described by Vendryes's law shifted the accent from the penultimate syllable to a **light** antepenultimate **syllable** in words that originally had a circumflex on the penultimate, as in Attic *ἔρημος* from earlier (and non-Attic) *ἐρῆμος*.

Wheeler's law the name given to an early Greek accent shift that moved an accent from the final syllable of a word terminating in a dactylic sequence (**heavy–light–light syllables**) to the penultimate, as in *ποικίλος* from **ποικιλός*.

Index locorum

Note: only passages discussed in the main text are indexed. Passages cited in the Appendices may be found there under words treated in those passages.

Word Index

Note: Discussions of words in the Appendices are not indexed. Languages are ordered as follows:

INDO-EUROPEAN—ALBANIAN—ANATOLIAN (Hittite)—ARMENIAN—BALTIC (Lithuanian—Old Prussian)—GERMANIC (Old English—Middle English—Modern English—Old Frisian—Old High German—Middle High German—Middle Low German—Modern High German—Gothic—Old Norse—Norwegian—Old Saxon—Swedish)—GREEK (Mycenaean—ancient—medieval—modern)—INDO-IRANIAN (Avestan—Sanskrit)—ITALIC (Latin)—SLAVONIC (Old Church Slavonic)—TOCHARIAN

Subject Index

Note: Greek names of main topics are alphabetized as if they were transliterated.