THEORIES OF PERCEPTION IN MEDIEVAL AND EARLY MODERN PHILOSOPHY

STUDIES IN THE HISTORY OF PHILOSOPHY OF MIND

Volume 6

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THEORIES OF PERCEPTION IN MEDIEVAL AND EARLY MODERN PHILOSOPHY

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ISBN: 978-1-4020-6124-0 e-ISBN: 978-1-4020-6125-7

Library of Congress Control Number: 2007938165

Printed on acid-free paper.

9 8 7 6 5 4 3 2 1

springer.com

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Preface

Sense perception is one of the classical themes in philosophy. Although perhaps not among the most exciting topics, it is traditionally considered a necessary preamble to many of these, such as the mind-body relationship, consciousness, knowledge, and scepticism. This introductory role is not the only reason for the philosophical interest in perception. It is also a phenomenon which raises important questions about what is perceived, how a perceptual experience is caused, what the content of perception is, whether this content is conceptual, how perception is related to epistemic attitudes, and so on. While philosophical psychology is the main area in which perception is dealt with in contemporary philosophy, it is also discussed in the theory of knowledge, cognitive science, philosophical aesthetics and metaphysics. In recent years, the rich tradition of various philosophical theories of perception has been increasingly studied by scholars of the history of philosophy of mind. It may be added that there is of course a large number of scientific studies of perception in psychology, physiology and contemporary neuroscience.

The aim of this collection is to shed light on the developments in theories of sense-perception in medieval Arabic and Latin philosophy, their ancient background, and traditional and new themes in early modern thought. Aristotle's treatises *On the Soul* and *On Sense and Sensibilia* are the most influential philosophical works on perception. The main tenets of his theory and the central themes of the philosophy of perception in medieval Aristotelianism are discussed by *Simo Knuuttila*. Many of the questions put forward in this chapter are also dealt with in other papers in this volume. The central Aristotelian idea is that the senses are perceptual powers which are causally activated by the things which are the objects of perceptions. Aristotle's approach to perception and other psychological matters by analysing various potentialities and their interaction has been very popular in the history of philosophy, and even though the physical aspects of Aristotle's theory are badly outdated, many (though not all) philosophers interested in ancient thought continue to consider it a valuable conceptual model.

Another influential ancient theory was Plotinus' Neoplatonic account of perception, which is discussed by *Eyjólfur Emilsson*. Plotinus reinterpreted the Aristotelian theory from the point of view of his strict dualism. External causality is restricted to the changes in sense-organs. The real subject of perception is the immaterial soul, which can be directly aware of processes in sense-organs, without being affected by

them in any way. Neoplatonic views influenced medieval Arabic and Latin thought by several routes. The Stoic theory of perception, which is analysed by *Håvard Løkke*, is a third ancient theory which shaped later discussions. This approach was associated with a special causal view of the physiological aspect of perception and psychological assumptions which stressed the activity of the subject in a way which was compatible with the antidualist metaphysics of the Stoics. Some elements of the Stoic theory, such as the conception of self-perception and perceptive attention, were also embedded in Neoplatonic accounts of perception, including the Augustinian tradition.

The elements of ancient theories were known to early medieval Latin authors through works of Augustine, the translation of Nemesius of Emesa's *De natura hominis* by Alfanus of Salerno *c*. 1080 and then Burgundio of Pisa *c*. 1165. The sixth book of Avicenna's *Shifā'*, translated by Gundissalinus and Avendauth *c*. 1150 as Avicenna's *De anima*, was another source for Latin psychology before the systematic studies of Aristotle's psychological works, which received an impulse from the translation of Averroes's commentaries in *c*. 1230. Avicenna's work combined Aristotelian, Galenic and Neoplatonic themes. Its Neoplatonic elements are surveyed by *Cristina D'Ancona*, particularly the role of sense perception in forming universal concepts and Avicenna's attempt to combine Aristotelian and Neoplatonic ideas of concept formation. Averroes's interpretation of Aristotle's conception of the science of the soul is dealt with by *Alfred Ivry*, as well Averroes's theory of the sensitive form as an intention in the medium and the soul and, furthermore, the role of these intentions in forming universal concepts. Ivry is particularly interested in how the individual powers of perception and imagination are related to the acts of the intellect, which is understood in terms of non-individual monopsychism.

Thirteenth-century commentaries on Aristotle's psychological works by Albert the Great, Thomas Aquinas and others usually took up the questions of the location of the unifying common sense which also was the ultimate seat of all external senses, the nature of the 'spiritual' or 'intentional' change in the organ and the medium between the object and the sense-organ, and how the sensible and intelligible species which activate perceptual and intellectual capacities are the same as sensible and intelligible forms in the objects. These topics, which were medieval developments of Aristotelian themes, are briefly described in Knuuttila's paper. *José Filipe Silva* discusses the attempt to reconcile Aristotelian and Augustinian ideas in Robert Kilwardby's *De spiritu phantastico*, written in the 1250s. Employing the medical vocabulary of the psychic spirit, Kilwardby describes the affects of sense-organs and nerves as corporeal motions. Perceptions themselves are acts of the immaterial sensitive spirit, which is continuously aware of the movements of the corporeal spirits.

In addition to the Neoplatonic criticism of the passivity of perception, some thinkers were sceptical of the interpretations of the Aristotelian doctrines of the change of the medium and the reception of sensible form without matter. Peter John Olivi criticized the theory of the multiplication of species which combined the Aristotelian idea of the change of the medium with Alhazen's theory of optics. Olivi took this to imply a representationalist view of perception which was in disagreement with the direct realism of his theory of active perception. William Ockham

found the spiritual change in the medium more problematic than the assumption that perceptual objects activated perceptual powers without any meditation. These questions are dealt with in *Robert Pasnau*'s book *Theories of Cognition in Later Middle Ages*, 1997, in which he also argues for the representationalist nature of Aquinas's account of sensitive and intellectual cognition. In his paper Robert Pasnau re-evaluates his much-debated thesis by discussing the difficulties of scholastic authors in explaining the inherence of accidental forms in their subjects and, analogously, the actuality of sensible forms in the sensitive soul. *Dominik Perler* deals with Ockham's ideas about sensory and intellectual cognition of particular objects, criticism of Ockham's view by Adam Wodeham, and the conception of sensory deception in Ockham. Ockham's cognitive realism was characterized by a refutation of the spiritual change in the medium and abstract universal objects. He argued that immediate sensory cognition differred from immediate intellectual cognition of present things, the former being pre-conceptual and non-judicative and the latter conceptual and accompanied by a judgement. Wodeham did not accept that there was a gap between sensory and intellectual acts so that we would need a separate act of conceptualizing the content of a sensory act. This controversy revived the question of the cognitive element of perception which was discussed earlier in the Stoic theory.

Although medieval discussions of the five senses largely concentrated on sight, all senses were dealt with in treatises on Aristotle's psychological works and some of them elsewhere as well. One example is Peter John Olivi's theory of the sense of touch and the perception of one's own body. This is discussed by *Mikko Yrjönsuuri*, who also analyses the levels of self-reflexivity in Olivi and compares his views of touch with those of Pietro d'Abano and Descartes. Pietro d'Abano's extensive work *Conciliator differentiarum philosophorum et medicorum* contained among other things discussions of such psychological and physiological views of perception as were thought controversial in the early fourteenth century. *Henrik Lagerlund* analyses d'Abano's views of sense-organs, the natural and spiritual changes in the medium and the perception as a mental act. These considerations were known to Renaissance authors; d'Abano's book was printed many times since 1472.

While Ockham argued for a plurality of forms in living beings, as many Franciscan thinkers did, John Buridan (d. after 1358) thought that each individual had only one soul of its own which was ultimately responsible for their various functions. *Jack Zupko* discusses Buridan's position that the human soul, as distinct from the soul of animals, is indivisible and non-extensive. The sensations of human beings consequently differ from those of animals, even when the sense-organs are similar. Zupko stresses that in Buridan's view the operation of the human senses is miraculous. There is no explanation of how the empirically observed functions of the senses are related to the sensory activity of the soul. Another controversial question among the followers of Ockham and Buridan pertained to whether external perceptions were about perceptible qualities or whether they also involved a perception of the substance. *Pekka Kärkkäinen* deals with this debate among late medieval nominalists in Erfurt, particularly Johannes de Lutrea and Bartholomaeus Usingen. Lutrea regarded the objects of sense perception as consisting exclusively of accidents,

since only they and not the substances cause the sensory cognition. According to Usingen's Buridanian position, the object of perception is an undifferentiated whole consisting of a substance and its accidents, which are not differentiated until the intellect is involved in the process. According to Usingen, the object of sight is coloured rather than merely colour. In this analysis the external senses cognize in a concrete manner, as distinct from Lutrea's 'abstract cognition'.

While Aristotle's view of the senses as passive powers was the dominant position in thirteenth-century Western Aristotelianism, as well as being popular later, it was criticized on the basis of Neoplatonic ideas and also qualified by those Aristotelians who accepted Averroes's suggestion that there is an agent sense analogous to the agent intellect. *Leen Spruit* deals with the arguments for an active perception in Renaissance authors outside the Peripatetic camp, such as Nicholas of Cusa, Marsilio Ficino and Bernardino Telesio, as well as the reactions of some sixteenth-century Aristotle commentators to the Averroist idea of agent sense, particularly those of Agostino Nifo, Cajetan and Zabarella. Aristotle's psychology remained popular in the seventeenth century, and one subject in this tradition is studied in *Michael Edwards's* article on the discussion of Aristotle's remarks on time and perceiving time in commentaries on Aristotle and in various textbooks in the late sixteenth and early seventeenth centuries, including the works of Zabarella, Franciscus Toletus, Hieronymus Dandinus, Juan de Guevara and the Coimbra commentaries.

The 'modern' theories attempted to explain the non-introspective basis of the traditional phenomenology of perceptions by means of purely physical causality without the concepts of perceivable forms and spiritual species, thus separating the perceptual content from how things were in themselves. These approaches were developed in different ways in Telesio's material pansensism, Hobbes's mechanistic materialism, Gassendi's atomism and Descartes's dualism. Among the most influential ideas formulated in this context were the representationalist theories of Descartes and Locke. *Martine Pécharman* discusses the notion of representative ideas in Descartes's philosophy of brain and mind and Malebranche's critical revision of this. *Ralph Schumacher* examines the problems of simple ideas in Locke's theory of primary and secondary qualities.

The articles of this volume are mostly based on papers delivered at a symposium in Helsinki in April 2004. This meeting was part of the European Science Foundation program *From Natural Philosophy to Science* and was financed by European Science Foundation and the History of Mind Centre of Excellence (Academy of Finland). The aim of the workshop was to elucidate the medieval reception of ancient theories of sense perception and particularly late medieval and early modern developments which partially deviated from the ancient heritage. The papers concentrate on the so-called external senses and related themes. Many of the central ideas of these traditions are discussed, although the collection is also meant to shed light on less studied subjects and open up new question horizons.

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Aristotle's Theory of Perception and Medieval Aristotelianism

Simo Knuuttila

My aim is to delineate the main lines of Aristotle's theory of perception and some of the questions which were considered controversial in the discussion of perception in medieval Latin Aristotelianism. I shall begin with some remarks on Plato's discussions of perception which reflect the kinds of conversation among Aristotle's predecessors. While Plato mainly concentrated on the epistemic aspect of perception, he also tried to elucidate some psychological and physiological details of sensory matters. In the *Theaetetus* Plato refers to the view that the number of external senses is not fixed (156b2–7). In the *Timaeus* he deals with four senses which are associated with specific sense-organs, namely sight, hearing, taste, odour, and the sense which was later called touch and which functions through the body in general. Plato seems to regard this as a commonly accepted classification (61c–68d). This was also Aristotle's view, who even tried to prove that there must be five external senses (*De an.* III.1). Medieval authors usually took this for granted.

1 Aristotelian Senses

Plato is particularly interested in the question of how knowledge is related to perception, but there are also remarks on physical causality and the mind-body relationship in his discussions of perception. Assuming that a perception is associated with a change in a sense-organ and this is caused by the object of perception, Plato asked what this change is, how it is brought about, and how one should understand the relationship between this change and the perception as an act of the soul. In Plato's view these things were not satisfactorily dealt with in earlier theories, particularly not by the atomists and those he regarded as Protagoreans. His own answer was based on a dualist theory of the body and the soul in which the former is an instrument of the latter.[1]

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[1] See G. Fine, "Plato on Perception: A Reply to Professor Turnbull, 'Becoming and Intelligibility' ", *Oxford Studies in Ancient Philosophy*, suppl. vol. (1988), 15–28; G. Fine, "Conflicting

S. Knuuttila, P. Kärkkäinen (eds.), *Theories of Perception in Medieval and Early Modern Philosophy,*

All these matters are dealt with in Aristotle's *De anima* and in *De sensu et sensibilibus*. Aristotle sometimes discussed the views of his predecessors, most notably those of Empedocles, Democritus, and Plato, but his main purpose was to put forward a theoretically based account of the psychological and physiological aspects of sense-perception.[2] It has been often maintained that Aristotle's theory of perception is essentially about sensitive capacities or, somewhat more specifically, about the active and passive powers treated as the basic explanatory factors of perception. This is true, but Aristotle was not the first to apply the potency model in philosophical psychology. Some aspects of this explanation were dealt with in Plato's *Theaetetus* in which he summarizes the main lines of what he considered the most influential philosophical conception:

> Their first principle is that everything is motion, and upon this all those things which we were just now speaking, are supposed to depend. There is nothing but motion, which is of two forms, that of having the power of acting (*dunamin to men poiein ekhon*) and that of having the power of being acted on (*to de paskhein*). Both of these are exemplified in endless number. Out of the union and friction of these is generated a progeny endless in number. These are twins, the perceptible (*aisthēton*) and the perception (*aisthēsis*) which always occurs and is generated together with the perceptible. The perceptions are variously named: there are hearings, seeings, smellings, and perceptions of heat, cold, pleasure, pain, desire, fear, and many more which have names, as well as innumerable others which have no name. The perceptible objects are generated with these perceptions, the variety of colours with the variety of sights, and so with sounds and hearings and the rest of the perceptions and the objects akin to them.
>
> (*Theaetetus* 156a–c)

While the idea of conceptualizing a perception through the notions of active and passive power was not an Aristotelian innovation, it was given a much more sophisticated and influential form in his psychological treatises.

In his natural philosophy, Aristotle tries to conceptualise various changes with a general theory of potentiality and actuality. The properties of this explanatory tool are most extensively analysed in *Physics* III.1–3 and in *Metaphysics* IX.1–5, where Aristotle distinguishes between the active and passive elements of potentiality.

Appearances: *Theaetetus* 153d–154b" in C. Gill and M. McCabe (eds.), *Form and Argument in Late Plato* (Oxford: Clarendon Press, 1999), 105–113; D. Sedley, *The Midwife of Platonism. Text and Subtext in Plato's* Theaetetus (Oxford: Clarendon Press, 2004), 38–53, 89–117; G. Grönroos, *Plato on Perceptual Cognition* (Ph. D. diss., University of Stockholm, 2001).

[2] For studies of Aristotle's theory of perception, see D. Modrak, *Aristotle: the Power of Perception* (Chicago: Chicago University Press, 1987); M. F. Burnyeat, "Is an Aristotelian Philosophy of Mind Still Credible? A Draft" in M. Nussbaum and A. O. Rorty (eds.), *Essays on Aristotle's* De anima (Oxford: Clarendon Press, 1992), 15–26; R. Sorabji, "Intentionality and Physiological Processes: Aristotle's Theory of Sense-Perception" in Nussbaum and Rorty (eds., 1992), 195–225; S. Everson, *Aristotle on Perception* (Oxford: Clarendon Press, 1997); T. K. Johansen, *Aristotle on the Sense-Organs* (Cambridge: Cambridge University Press, 1998); M. F. Burnyeat, "De anima *II.5*", *Phronesis* 47 (2002), 28–90; R. Bolton, "Perception Naturalized: Aristotle's *De anima* II.5", in R. Salles (ed.), *Metaphysics, Soul, and Ethics in Ancient Thought: Themes from the Work of Richard Sorabji* (Oxford: Clarendon Press, 2005), 209–244; V. Caston, "The Spirit and the Letter: Aristotle on Perception", *ibid.*, 245–320.

When things of a certain kind have an active potency of acting or a passive potency of being acted on, their having an active potency implies that there is a corresponding passive potency, and their having the passive potency implies that there is a corresponding active potency. Generic active and passive potencies are thus mutually interdependent. Changes in the sublunar nature are mostly actualizations of a passive potency which is actualized by a corresponding active potency. Active and passive potencies as partial powers of change are unactualized, but when a passive and active power come together and there is no external hindrance, the active power necessarily acts and the passive power is acted on.[3]

In speaking about the potencies Aristotle often draws a distinction between lower-order potencies which are some kind of dispositional presuppositions of first-order active and passive potencies which together form the immediate source of motion or change. When the second-order potencies have become first-order potencies and when the first-order active and passive potencies pertaining to the same natural change are in interaction, the change necessarily takes place. One of Aristotle's examples of the levels of potency is knowledge. One's knowledge of the principles of geometry is a first-order potentiality for solving geometrical problems; one's lower-order potency for this is the capability to learn geometry before one masters it. (See *Phys.* VIII.4, 255a33–b7, *EN* VII.3, 1147a10–24, *De an.* II.5, 417a22–b2.)

The theory of natural potencies is associated with the philosophical idea of matter and form as the basic ontological constituents. The members of a natural species have some typical powers and these are ultimately determined by the substantial form of the species. At the beginning of the second book of the *De anima*, Aristotle defines beings with living bodies as composite substances which have matter and form. The form of these is a soul (*psychē*) which makes the composite the kind of being it is by acting as the organizing principle of its components and capacities. The capacities are hierarchical. All living things have the capacity of nutrition. While plants have no other function, animals also have the capacity for perception and desire, and humans possess all these and the capacity for abstract thought. Not all ingestion of matter is nutrition; the substance must be nourished by matter, and this takes place in plants and animals. Having souls they have the capacity of nutrition and the organs needed for this purpose. Similarly animals have the capacity of perception and various sense-organs, because these belong to substances with an animal soul. Aristotle concludes the section about soul as a form by claiming that the most adequate account of the substances with various souls is given by the account of their proper capacities (*De an.* II.3, 415a1–13).[4]

Aristotle begins the account of the capacities with a methodological remark. In order to understand a capacity for perceiving something, one should first say what perceiving is, for activities and actions are prior in account to capacities,

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[3] See also S. Waterlow, *Nature, Change, and Agency in Aristotle's Physics* (Oxford: Clarendon Press, 1982); S. Knuuttila, *Modalities in Medieval Philosophy* (London: Routledge, 1993), 19–31.

[4] For the hierarchy of the functions of the soul, see S. Everson, "Psychology" in J. Barnes (ed.), *The Cambridge Companion to Aristotle* (Cambridge: Cambridge University Press, 1995), 174–177; Everson (1997), 60–69.

and even before these, one should investigate their correlative objects (*De an.* II.4, 415a16–22). Aristotle has very little to say about seeing or hearing or other acts of perception as activities. In fact it is difficult to explain what they are except by referring to one's own experiences. The proper objects of a sense are those with which one is acquainted through this sense. This seems to be the reason for saying that one should begin with an analysis of the objects. Perceptions are directed to objects which are also their ultimate activating causes (*De an.* II.5, 417b20–21). The actuality of the perceptible as a mover and an object and the actuality of the perceptual capacity as a recipient are 'one and the same, though their being is not the same' (*De an.* III.2, 425b26–27, 426a15–17). Let us consider the background of this influential formulation.

In *De anima* II.5 Aristotle characterizes the senses as potentialities which are actualized by an external activator. These abilities are described by the model of the levels of potentiality:

> We can speak of something as a knower either as when we say that man is a knower, meaning that man is one of those who know and have knowledge, or as when we speak of a man who has knowledge of grammar … And there is the man who is already contemplating, the man who actually and in the proper sense knows something particular … The first change in that which can perceive is brought about by the father, and when it is born it already has perception in the same way as it has knowledge. Actual perception is thus spoken of in the same way as contemplation.
>
> (*De an.* II.5, 417a22–b19)

Passive potencies cannot be actualized by themselves. Aristotle says that this explains why we do not perceive the senses themselves. An ability to perceive is made actual by a separate external object. Were it to perceive in and through itself, the activating power should be embedded in the sense power. It would then perceive itself and nothing else.

> One might ask why we do not perceive the senses themselves … It is clear that what is sensitive is so potentially and not actually; for this reason it does not perceive itself, just as that which is combustible does not burn in and through itself without something that can burn it. Otherwise it would burn itself and would need no actually existing fire.
>
> (*De an.* II.5, 417a2–9)

The activating component of a perceptual act is also the object of perception. This is the perceptible form and its perceptibility is actualized as the content of a perception:

> For just as both acting and being acted on are in that which is acted on and not in that which acts, so both the actuality of the perceptible and the actuality of that which can perceive are in that which can perceive.
>
> (*De an.* III.2, 426a9–11)

As distinct from the relativistic approach mentioned in the *Theaetetus*, Aristotle regarded the perceptible forms as objective constituents of reality. The actuality of what can be perceived and the sense as perceiving is one, although what it is for them to be is not the same. Thus the visibility of whiteness is actualized in the act of seeing it, though the visibility itself is separate from the act of seeing.

> Since the actuality of the perceptible and that which can perceive is one, though their being is different, actual hearing and actual sounding must be simultaneously destroyed and simultaneously preserved, and so actual flavour and actual tasting and the others similarly, while this is not necessary when these are spoken of as potentialities. But the earlier philosophers of nature were mistaken in their view that without sight there was no white or black, nor flavour without taste. Their statement was partly true and partly false; for since the perception and the perceptible are spoken in two ways, as potential and as actual, the statement holds of the latter, but does not hold of the former.
>
> (*De an.* III.2, 426a15–25)

In Aristotle's natural philosophy, the active and passive powers are the basic explanatory factors of physical change, together with the additional requirements that there are no external hindrances and that the powers are in contact. The application of this model to sight is associated with the problem that the activator is not in contact with the power to be activated. Aristotle's discussion of the medium is meant to explain how the active power can seemingly move the passive power from a distance. It is assumed that the object has the power of changing the medium, which is first made actually transparent by the light, in such a way that the visible form without its matter will be immediately present to the power of the sight and activate it. This change in the medium continues in the transparent liquid in the eye and through this the activating form actualizes the power of sight. Aristotle writes:

> For this is just what it is to be a colour, to be capable of changing that which is actually transparent, and the actuality of the transparent is light. There is a clear indication of this, for if one places that which has colour upon the eye itself, one will not see it. The colour changes what is transparent, e. g. the air, and the sense-organ is moved in turn by this when it is continuous … The same account applies to both sound and smell … The same applies also to touch and taste, though it is not obvious.
>
> (*De an.* II.7, 419a9–31)

Aristotle did not explain how the medium and the eye are changed when they mediate between the active and passive power of seeing. However, he thinks that the necessity of the mediating change is shown by the fact that an object cannot be seen if it is upon the eye. This same model is repeated in the accounts of other senses. Aristotle argues that in the case of taste and touch the flesh is the medium and the organ is deeper in the body (*De an.* II.7, 419a30–31; II.11, 423b20–26). In *Parva naturalia* the heart is the centre where the psychic powers are located and all sensations ultimately take place (*De sensu* 2, 439a1–2; *De somno* 2, 456a3–6; *De juventute* 3, 469a10–16).

The theory of the medium is part of the physiological account of perception. Each sense-organ has to be composed of matter which is suitable for the reception of the sensible form which activates the sense faculty. The physiological constituents and changes in sense-organs are determined by the sensitive soul which is the formal cause of perception.[5] From a psychological point of view, a perception is an actualization of perceptual potency. When the power of perceiving changes from potentiality to actuality, the sense-organ has undergone a change which contributes

[5] See Everson (1997), 78–82.

to the presence of the activating object, but the actualization of the perceptual ability (and the perceptibility of the object) is another kind of change:

> To be acted upon is not a simple expression. It may mean either the destruction of one of the two contraries by the other or the maintenance of what is potential by that which is actual and already like what is acted upon, as actual to potential. For that which has knowledge comes to contemplate, and this is either not an alteration at all, being a development of the thing into itself and into actuality, or this is a different kind of alteration.
>
> (*De anima* II.5, 417b2–7)

In stating that the objects of perception are potentially or actually perceptible (cf. *De an.* II.5, 417a13–14), Aristotle implies that when a perceptible object actualizes a passive sensory power, the perceptibility of the object is actualized at the same time. This actuality is the same as that of the sensory power, although their being is not the same.

The question of the nature of the changes in the medium and the organs was thought problematic by medieval commentators. Aristotle's phrase 'taking on form without matter' was not particularly helpful:

> A sense is that which has the power of receiving perceptible forms without the matter, in the way in which a piece of wax takes on the imprint of the signet ring without the iron or gold; it takes the imprint of a signet of bronze or gold, but not *qua* bronze or gold. In a similar way the sense is affected by what is coloured or flavoured or sounding, not insofar as each is what it is, but insofar as it is of such a sort and according to its *logos*.
>
> (*De an.* II.12, 424a17–24)[6]

Aristotle claimed that when the perceptive faculty is affected by a perceptible object, 'it is made like it and is such as that thing is' (*De an.* II.5, 418a5–6). He treated the actualization of the perceivability of an object in accordance with his general theory of potencies and believed that this philosophical account is sufficiently supported by what he regarded as empirical facts about perception. Contemporary controversies among interpreters are largely concentrated on what Aristotle took these facts to be.[7]

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[6] Aristotle states that each sense is a mean between sensible extremes; this is meant to explain why the senses can discriminate the sense objects in their sensory area (II.11, 424a4–6; II.12, 424b1, III.2, 426b8–12).

[7] Some commentators, following Richard Sorabji, argue that sense-organs literarily become like the objects of perception. The critics, most notably Myles Burnyeat, hold that receiving form without matter is not a physiological process underlying perceptual awareness; it is perceptual awareness of something, a cognitive state which is determined by its object. Many authors notice that Aristotle assumes that sense-impressions produce eddies in the blood which move to the central sense organ in the heart (*De insomniis* 3, 461a25–b1) and that the nature of the phantasms which are caused by impressions depend on the physical constitution of the subject (*De mem.* 1, 450a32–b11; 2, 453a14–b7). This seems to imply that sense-impressions have a physical foundation. For these controversies, see Burnyeat (1992); Sorabji (1992); M. Nussbaum and H. Putnam, "Changing Aristotle's Mind" in Nusbaum and Rorty (eds., 1992), 27–56; S. Broadie, "Aristotle's Perceptual Realism" in J. Ellis (ed.), *Ancient Minds*, *The Southern Journal of Philosophy* 31, Suppl. (1993), 137–159; Everson (1997), 5–11, 56–60, 96–102; R. Sorabji, "Aristotle on Sensory Processes and Intentionality: A Reply to Myles Burnyeat" in D. Perler (ed.), *Ancient and Medieval Theories of Intentionality*, Studien und Texte zur Geistesgeschichte des Mittelalters, 76 (Leiden: Brill, 2001), 49–61; Burnyeat (2002); Caston (2005); Bolton (2005).

In Chapter 6 of the second book of *De anima* Aristotle distinguishes between three kinds of objects of perception for each sense. These are proper, common and incidental objects. The relation between the sense and its proper object is essential – the sense is defined by reference to the kind of object or *vice versa.* In dealing with sight Aristotle mainly concentrates on seeing colour, which is its proper object. It does not follow that this is all that is seen; there are common objects which are also seen and perceived in some way through some other senses. Aristotle often refers to the common sensibles which are perceptible at least by two senses. These include movement, rest, number, unity, figure, size, smoothness, roughness, bluntness, sharpness and time.[8]

In *De sensu* 7 (449a16–19), Aristotle argues that the senses can be regarded as various functions of one central faculty of perception, 'that which can perceive all things'.[9] This central faculty is probably referred to by the expressions 'the ability that accompanies all the senses in common' (*De somno* 2, 455a16) and 'the primary sense faculty' (*De mem.* 1, 450a11–12, 451a17). 'The common sense' mentioned in *De an.* III.1, 425a27, *De part. an.* IV.10, 686a31 and *De mem.*1, 450a10–11 either is identical with the primary sense faculty or included in it.[10] This is the primary power of perceiving in general and consequently the power of perceiving simultaneously different sense-objects,[11] that simultaneous sense-objects differ,[12] that they belong to one thing,[13] and that we perceive.[14] If the perception of perception is part of a genuine perception, there are no unperceived perceptions.[15] The perceptual contents are also dealt with by the faculties of imagination and memory both of which are

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[8] For common sensibles, see *De an.* II.6, 418a16–19; III.1, 425a14–16; III.3, 428b22–24; *De sensu* 4, 442b4–7; *De mem.* 1, 450a9–10, 451a16–17. Accidentally sensible are the subjects of proper objects, for example the son of Diares who is white (*De an.* II.6, 418a20–21).

[9] See also *De somno* 2, 455a20–22. In sanguineous animals the 'primary sense-organ' of the primary sense-faculty is the heart (*De somno* 2, 455a21, 33, b9–10, 456a3–6, 21; *De juventute* 3, 469a10–16). Aristotle maintains that some traces of sense-impressions are moved from the sense-organs to the heart through blood-vessels. These can make the primary sense-faculty to have dreams which are similar to actual perceptions. (See *De insomniis* 3, 461a4–7, 461b11–15, 462a25–31.) Since perceptions take place in the central faculty which is associated with the heart, one might think that they also presuppose these movements. For a critical discussion of this question, see P. J. van der Eijk, *Aristoteles: De insomniis, De divinatione per somnum,* Aristoteles: Werke in deutscher Übersetzung 14.3 (Berlin: Akademie-Verlag, 1994), 81–87.

[10] See also W. D. Ross, *Aristotle: Parva Naturalia.* A Revised Text with Introduction and Commentary (Oxford: Clarendon Press, 1955), 34–35; R. Sorabji, *Aristotle: On Memory* (London: Duckworth, 1972), 75–76, Everson 1997, 78–82.

[11] *De an.* III.2, 426b18–19; *De sensu* 7, 449a2–20.

[12] *De somno* 2, 455a17–20.

[13] *De an.* III.1, 425a30–b3.

[14] *De somno* 2, 455a16–17.

[15] For the perception of perception, see also *De an.* III.2, 425b12–25; *EN* X.9, 1170a29–30; *Met.* XII.9, 1074b35–36; *Phys.* VII.2, 244b12–245a2. If there is a sense-impression (*aisthēma*) in a sense-organ without the awareness of perception, this is not a perception. For awareness as part of perception, see C. H. Kahn, "Sensation and Consciousness in Aristotle's Psychology", *Archiv für Geschichte der Philosophie* 48 (1966), 43–81, M. Wedin, *Mind and Imagination in Aristotle* (New Haven: Yale University, 1988), 30–31, Everson (1997), 141–148.

found in the primary sense faculty and located in the heart. While imagination is the power of actualizing phantasms which are left in the sensitive faculty from sense-impressions, memory is the related faculty of actualizing these as representing past things.[16]

2 Medieval Developments

Early medieval Latin discussions of the perception were largely influenced by the sixth book of Avicenna's *Shifā'*, translated by Gundissalinus and Avendauth *c.* 1150 as Avicenna's *De anima*, and by Nemesius of Emesa's *De natura hominis*, translated first by Alfanus of Salerno *c.* 1080 and then Burgundio of Pisa *c.* 1165.[17] Aristotle's *De anima* was also translated at the same time by James of Venice and was discussed by some early thirteenth-century authors, but the first commentaries on it were written only in the 1240s. Averroes's commentary was translated into Latin *c.* 1220–1235.[18] Avicenna distinguished between five internal and five external senses on the basis of whether the objects of perception are internal or external. His description of the five external senses combined Aristotelian and Galenic medical ideas which were also known to Latin scholars through the *Pantegni*, Constantine the African's translation of the theoretical part of the medical encyclopaedia of ʿAlī ibn al-ʿAbbās al-Maǧūsī.[19] The descriptions of the senses in Nemesius of Emesa's *De natura hominis* were also influenced by Galenic medical philosophy.[20]

Avicenna taught that, physiologically speaking, sense perceptions (other than that of smell) take place in the sensory nerves and the brain. The sensory nerves are con-

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[16] Aristotle characterized the faculties of memory and imagination in *De mem.*1, 449b30–450a25. In *De insomniis* he discusses dreams as non-voluntary acts of imagination which are based on earlier perceptions. For memory and imagination, see R. A. H. King, Aristotle, *De memoria et reminiscentia*, Aristoteles: Werke in deutscher Übersetzung 14.2 (Berlin: Akademie-Verlag, 2004), 89–95; D. Bloch, Aristotle, *De memoria et reminiscentia*: Text, Translation and Interpretative Essays (Ph. D. diss., University of Copenhagen, 2006), 59–62. According to Aristotle, it is not possible to think without images (*phantasmata*) derived from perceptions (*De an.* III.7, 431a16–17, 431b2; III.8, 432a8–9, 13–14; *De mem.* 1, 449b31–450a1). This became an influential part of later Aristotelianism, as is shown by the scholastic doctrine of *conversio ad phantasmata.* See Thomas Aquinas, *Summa theologiae*, ed. P. Caramello (Turin: Marietti, 1948–50), I.84.7.

[17] Avicenna, *Liber de anima seu Sextus de naturalibus*, ed. S. van Riet, Avicenna Latinus (I–III, Louvain: Peeters; Leiden: Brill, 1972; IV–V, Louvain: Éditions Orientalistes; Leiden: Brill, 1968); Nemesius of Emesa, *De natura hominis*, ed. M. Morani (Leipzig: Teubner, 1987); *De natura hominis: Traduction de Burgundio de Pise*, ed. G. Verbeke and J. R. Moncho, Corpus Latinum Commentariorum in Aristotelem Graecorum, suppl. 1 (Leiden: Brill, 1975).

[18] B. G. Dod, "Aristoteles Latinus" in N. Kretzmann, A. Kenny, J. Pinborg (eds.), *The Cambridge History of Later Medieval Philosophy* (Cambridge: Cambridge University Press, 1982), 76.

[19] *Pantegni*, trans. Constantine of Africa, in *Opera omnia Ysaac*, II (Lyons, 1515).

[20] Nemesius of Emesa, *De natura hominis*, ed. Verbeke and Moncho, 6–10 (73–86). Galen's view of the spirits was also known through Qusta ibn Luqa's *On the Difference between Spirit and the Soul* which was translated into Latin in the first half of the twelfth century. Two Latin versions are edited in J. Wilcox, *The Transmission and Influence of Qusta ibn Luqa's* On the Difference between Spirit and the Soul (Ph. D. diss., The City University of New York, 1984).

nected to the front part of the brain where the imprints of sensible forms received by external sense organs are conveyed by the spirit in the connecting nerves. The organ of smell is directly connected to the brain. The internal common sense is located in the same part of the brain. Sense-organs are instruments of the soul which is the real subject of perception, perceptions being acts of the perceptive power of the soul. The five external sense-powers are parts of the common sense, the primary power of perception.[21] Avicenna's characterization of the sense-perceptions differs from Aristotle's theory because of the central role of the theories of the brain and the nerves and Avicenna's Neoplatonic conception of the soul which uses the corporeal things as instruments. Neoplatonic thinkers believed that the soul cannot be externally affected and is active by nature. In commenting on Aristotle's *De anima* they argued that Aristotle's remarks on active and passive powers are true merely of the material concomitants which serve as the preconditions of perceptions. Perceptions as psychic acts are not passive receptions, but active apprehensions of physical changes and their causes.[22] Avicenna referred to the Neoplatonic theory without entering its details in his *De anima.*[23] According to him, all knowledge of the things in the world is based on the abstraction by the soul of forms. Sense perception is the lowest mode of abstraction.[24] The Neoplatonic theory was also dealt with by Nemesius of Emesa and Augustine and was well known to early medieval authors.[25] Early Latin commentators on Aristotle's *De anima* defended

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[21] *De anima* I.5, II.2–III; F. Rahman, *Avicenna's Psychology: An English Translation of* Kitāb al-najāt, *Book II, Chapter VI with Historico-philosophical Notes and Textual Improvements on the Cairo Edition* (London: Oxford University Press, 1952), 25–29. These descriptions were quoted in Dominicus Gundissalinus*, Tractatus de anima*, ed. J. T. Muckle, *Mediaeval Studies* 2 (1940), 67–70.

[22] Priscian, *Metaphrasis in Theophrastum*, ed. I. Bywater, Commentaria in Aristotelem Graeca suppl. I.2 (Berlin: Reimer, 1886), translated by G. P. Huby in Priscian, *On* Theophtastus' *On Sense-Perception* (Ithaca, NY: Cornell University Press, 1997), 15; Simplicius (?), *In libros Aristotelis de anima commentaria*, ed. M. Hayduck, Commentaria in Aristotelem Graeca, 11 (Berlin: Reimer, 1882), 125.14–16, 128.24–26, 165.1–6, translated by C. Steel in 'Simplicius', *On Aristotle's* On the Soul *2.5–12* (Ithaca, NY: Cornell University Press, 1997), 154, 158, 204; for further texts, see R. Sorabji, *The Philosophy of the Commentators 200–600 AD. A Sourcebook, vol. I: Psychology* (London: Duckworth, 2004), 44–46.

[23] Avicenna argues that as far as the soul perceives by means of bodily sense-organs, it is not aware of itself or its acts at this level, for it is incomprehensible how these acts could be perceived through sense-organs. The awareness of perception belongs to the higher part of the soul which is not united to the body; *Kitāb al-najāt,* trans. Rahman, 51–52, 66; *De anima* V.2 (96.1–97.11). See also J. Kaukua and T. Kukkonen, "Sence-Perception and Self-Awareness: Before and After Avicenna", S. Heinämaa, V. Lähteenmäki, P. Remes (eds.), *Consciousness: From Perception to Reflection in the History of Philosophy*, Studies in the History of Philosophy of Mind 4 (Dordrecht: Springer, 2007), 95–119.

[24] See *Kitāb al-najāt*, trans. Rahman, 38–40, and Cristina D'Ancona's article in this volume.

[25] In Chapter 3 of his *De natura hominis*, ed. Verbeke and Moncho, Nemesius of Emesa describes the union of soul with body. The soul modifies whatever it indwells in accordance with its own life, without suffering any reciprocal change. Nemesius quotes Porphyry's treatise *On Sense-perception*, according to which the ultimate cause of seeing is the soul which encounters the object of sight and recognizes that it is what it sees; Ch. 6 (75–76). For the activity of the sensitive soul in perception (*attentio*, *intentio*) in Augustine, see *De genesi ad litteram*, ed. J. Zycha,

the view that perceptions are actualizations of passive potencies. Sensible forms which are first received by the sense-organs activate the sense-powers and determinate their acts.[26] In his commentary on Aristotle's *De anima* Averroes suggested that perceptions might be associated with an active principle which is analogous to the agent intellect.[27] This was one of the texts which kept alive the question of whether there was something active in perceptions themselves, a discussion which continued in Renaissance philosophy.[28] Following Aristotle's remarks in *De anima*

Corpus Scriptorum Ecclesiasticorum Latinorum 28 (Vienna and Prague: F. Tempsky; Leipzig: G. Freytag, 1894), VII.20; XII.12; XII.24; *De Trinitate*, ed. W. J. Mountain with the assistance of F. Glorie, Corpus Christianorum Series Latina, 50 (Turnhout: Brepols, 1968), XI.2.2; *De musica* in J.-P. Migne, ed., *Patrologia Latina* 32, 6.5.8–10. For medieval authors, see Alcher of Clairvaux (?), *De spiritu et anima*, *Patrologia Latina* 40, 795–798; William of Saint Thierry, *De natura corporis et animae*, ed. and trans. by M. Lemoine (Paris: Les Belles Lettres, 1988), I.39–46, 109 (quoting the *Pantegni* and Augustine); trans.B. Clark in B. McGinn (ed.), *Three Treatises on Man: A Cistercian Anthropology*, The Cistercian Fathers Series, 24 (Kalamazoo, Mich.: Cistercian Publications, 1977); Robert Kilwardby, *De spiritu fantastico*, ed. P. O. Lewry, Auctores Britannici Medii Aevi, IX.1 (Oxford: Oxford University Press, 1987), 103, 112, 123, discussed by José Filipe Silva in this volume. For William of Auvergne, see also E. A. Moody, *Studies in Medieval Philosophy, Science, and Logic: Collected Papers 1933–1969;* (Berkeley, CA: University of California Press, 1975), 40–58.

[26] *Anonymi Magistri Artium (1246–1247) Sentencia super II and III De anima*, ed. B. C. Bazán, Philosophes médiévaux, 37 (Louvain-la-Neuve: Éditions de l'Institut Supérieur de Philosophie; Louvain and Paris: Peeters, 1998), 126–130; *Anonymi Magistri Artium (c. 1245–1250) Lectura in Librum De anima*, ed. R.-A. Gauthier, Spicilegium Bonaventurianum, 24 (Grottaferrata: Collegium S. Bonaventurae ad Claras Aquas, 1985), 272, 276–277; Peter of Spain, *Scientia libri De anima*, ed. M. Alonso, (Madrid: Instituto Filosofico 'Luis Vives', 1941), VI.9 (230–231); Peter of Spain (?), *Expositio libri De anima* in *Pedro Hispano Obras Filosóficas* III, ed. M. Alonso (Madrid: Instituto de Filosofia 'Luis Vives', 1952), 262–270; Albert the Great, *Summae de creaturis secunda pars, quae est de homine*, ed. A Borgnet, *Opera omnia*, 35 (Paris, Vivès, 1896), 34.1 (295–297); Albert the Great, *De anima*, ed. C. Stroick, *Alberti Magni Opera omnia* VII.1 (Münster: Aschendorff 1968), II.3.1 (96.36–97.51); 2.3.2 (99.35–99.87); 2.3.6 (107.40–82); Thomas Aquinas, *Sentencia libri De anima*, ed. R.-A. Gauthier, *Sancti Thomae de Aquino doctoris angelici Opera omnia iussu Leonis XIII P. M. edita,* 45.1 (Rome: Commissio Leonina; Paris: Vrin, 1984), II.11 (110–113). The latter text edited by M. Alonso is attributed to Richard Rufus by Rega Wood in "Richard Rufus's *De anima* Commentary: The Earliest Known, Surviving, Western *De anima* Commentary", *Medieval Philosophy and Theology* 10 (2001), 119–156. Many authors remarked that perceptions as discriminations of forms are also active; see *Sentencia super II and III De anima*, ed. Bazán, 127; *Lectura in Librum De anima*, ed. Gauthier, 277; Albert the Great, *De anima* II.4.2 (150.60–151.7).

[27] Averroes, *Commentarium magnum in Aristotelis De anima libros*, ed. F. S. Crawford, Corpus Commentariorum Averrois in Aristotelem Versionum Latinarum, VI.1 (Cambridge, Mass.: The Mediaeval Academy of America, 1953), 221. Peter of Spain took this to mean that the intentions in the medium are not sufficient to actualize the senses without an abstracting activity by a separate agent; *Scientia libri De anima*, VI.9 (232). For a critical discussion of this and other arguments for the activity of senses, see Albert the Great, *De anima* II.3.6 (104–107); Averroes's idea is also criticized in *Lectura in Librum De anima*, ed. Gauthier, 279, and the activity of senses in general in Aquinas, *Sentencia libri De anima* II.27 (186.226–228).

[28] See the article by Leen Spruit in this volume. Many late medieval thinkers wanted to qualify Aristotle's theory in this way; in addition to John of Jandun and John Buridan, mentioned by Spruit, see for example Nicole Oresme, *Expositio et Quaestiones in Aristotelis De anima*, ed. B. Patar, Philosophes médiévaux 32 (Louvain-la-Neuve: Éditions de l'Institut Supérieur de

III.2, some commentators taught that when a perceptible form actualizes a passive sensory power, its possibility of being perceived is actualized at the same time when the power is actualized. This actualization of the potential perceptibility takes place in the perceiver and not in the object which is potentially perceptible.[29]

In dealing with the physiological seat of cognitive functions, the important authorities of early medieval psychology, such as Nemesius of Emesa, Avicenna and of ʿAlī ibn al-ʿAbbās al-Maǧūsī, argued for the brain-centred view of Galen. Avicenna also repeat the traditional attempt to reconcile this with Aristotle's heart-centred view by arguing that the spirit which functions in the brain is first generated in the heart.[30] The brain theory was popular among the Latin authors before Aristotle's psychological works became dominant in the mid-thirteenth-century. Even then many authors held the brain-centred view, for example Thomas Aquinas.[31] But there were others who argued that the medical evidence for locating mental acts in the brain was not convincing and, furthermore, that it was more probable that the brain is merely an external instrument of psychic functions which took place in the heart. The main reason for this development seems to have been the authority of Aristotle and Averroes and the scepticism about the physicians' ability to explain their observations.[32] An anonymous author of the 1270s writes:

> It is said on the authority of Avicenna that common sense is some organic faculty. I will agree with this part of the premise. But if it is said: existing in the first part of the brain, I will deny this following the natural philosophers, although the physicians maintain this view following Avicenna. To this it has to be remarked that the physicians are given up to the senses … And because the philosophers are more subtle that the physicians, they speak

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Philosophie; Louvain and Paris: Peeters, 1995). II.9; Nicole Oresme, *De causis mirabilium*, ed. in B. Hansen, *Nicole Oresme and the Marvels of Nature: A Study of his* De causis mirabilium *with Critical Edition, Translation and Commentary*, Studies and Texts 68 (Toronto: Pontifical Institute of Mediaeval Studies, 1985), 2.3–7, 307–309, 3.109–114.

[29] Thomas Aquinas, *Sentencia libri De anima* II.26 (179–180); Peter of Spain (?), *Expositio libri De anima,* 266–267.

[30] The part of the *Pantegni* (*Theorica* 14.19) which deals with the pneuma in the brain is edited in C. Burnett, "The Chapter on the Spirits in the *Pantegni* of Constantine the African" in C. Burnett and J. Jacquart (eds.), *Constantine the African and ʿAlī ibn al-ʿAbbās al-Maǧūsī* (Leiden: Brill, 1994), 113–115. For Nemesius of Emesa, see *De natura hominis*, Ch. 7, and Avicenna, *De anima* V.8, 176.76–181.54, *Canon* (Venice, 1507), 1.1.6.1. See also E. R. Harvey, *The Inward Wits* (London: The Warburg Institute, 1975), 22–23.

[31] See Peter of Spain, *Scientia libri De anima* VI.6 (216); *Lectura in librum De anima*, ed. Gauthier, 420–422; *Sententia super II et III De anima*, ed. Bazán, 161, 364; Albert the Great, *De somno et vigilia*, ed. A. Borgnet, *Opera omnia*, IX (Paris: Vives 1890), 132–133; *De anima*, ed. Stroick, 2.4.7 (158.10–33); Thomas Aquinas, *Summa theologiae* I.78.4 and the notes in Aquinas's *Sentencia libri De anima*, ed. Gauthier, II.4 (84).

[32] According to Averroes, the brain is the instrument of the sensory acts which take place in the heart; Averroes, *Compendia librorum Aristotelis qui Parva naturalia vocantur*, ed. A. L. Shields, Corpus Commentariorum Averrois in Aristotelem Versionum Latinarum, VII (Cambridge, Mass.: The Mediaeval Academy of America, 1949), 84–85 (*De somno et vigilia)*; *Colliget* in *Aristotelis opera cum Averrois commentariis*, suppl. 1 (Venice, 1571), II.20. See also H. Gätje, "Die 'inneren Sinne' bei Averroes", *Zeitschrift der deutschen morgenländischen Gesellschaft* 115 (1965), 255–293.

> much more subtly about the organ of the common sense, saying that the common sense is in the heart as its organ, in the way of a faculty and of something spiritual.[33]

Texts of this kind undermined the brain-centred consensus. In his influential *Conciliator* Pietro d'Abano accepted the view that the cognitive functions are located in the animal spirit of the brain, as did John Duns Scotus in his questions on Aristotle's *On the Soul*, but both treated this as a controversial topic.[34] Some later fourteenth-century authors such as Ugo Benzi were sceptical about whether one can decide between the competing views.[35] John Buridan, the famous Parisian master of the early part of the fourteenth-century, took a different stance:

> We say that the organ of the common sense is in the heart and that this is true, because sensations take place in the heart *subiective*. When others say that the organ of the common sense is in the brain, this is not properly speaking true, but true only in the sense all sensible forms are gathered and brought there before they are generated in the heart where the sensations as such take place *subiective*.
>
> (*Questions on Aristotle's* On the Soul, third redaction II.24)[36]

Buridan found the heart-centred conception as a reasonable position and, like the Stoics, argued that the feelings around the heart which accompany emotions corroborate the view that it must be the seat of the common sense – the central faculty of the sensitive soul. The traditional argument for the role of the ventricles of the brain was based on the observation that people have various psychological dysfunctions, depending on which part of the brain is injured. Buridan states that these phenomena can be understood as caused by lesions of the nerves which first go from the senses to the brain and then to the heart.[37] Buridan was an influential author and his view was repeated by many late medieval and Renaissance authors, such as Peter of Ailly in Paris and Bartholomeus Arnoldi de Usingen and Jodocus Trutfetter in Erfurt.[38]

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[33] *Quaestiones de anima*, ed. C. Bazán in *Trois commentaires anonymes sur le Traité de l'âme d'Aristote*, ed. M. Giele, F. van Steenberghen, C. Bazán, Philosophes médiévaux, 11 (Louvain: Peeters 1971), 465; the translation is quoted from D. N. Hasse, *Avicenna's De anima on the Latin West* (London: The Warburg Institute; Turin: Nino Aragno Editore, 2000), 106.

[34] Pietro d'Abano, *Conciliator differentiarum philosophorum et precipue medicorum* (Venice, 1565), d. 38, f. 59^{vb}–60^{ra}; d. 41, f. 63^{ra-b}; John Duns Scotus, *Quaestiones in Aristotelis* De anima, *Opera omnia*, ed. L. Wadding (Lyons, 1639), vol. 2, 488–489. Pietro d'Abano and some others found the Aristotelian view relevant in this context, thinking that the systems of psychic spirits, vital spirits and the humours are interdependent and that an organism is a whole with various functions. For some medieval medical discussions, see also N. G. Siraisi, *Taddeo Alderotti and his Pupils* (Princeton: Princeton University Press, 1981), 186–201.

[35] See P. Ottosson, *Scholastic Medicine and Philosophy. A Study of Commentaries on Galen's* Tegni *(ca. 1300–1450)* (Naples: Bibliopolis, 1984), 227.

[36] John Buridan, *Quaestiones in Aristotelis De anima liber secundus de tertia lectura*, ed. P. G. Sobol in *John Buridan on the Soul and Sensation* (Ph. D. diss., Indiana University, 1984).

[37] *Ibid.* II.24. See also P. G. Sobol, "Sensations, Intentions, Memories, and Dreams" in J. Thijssen and J. Zupko (eds.), *The Metaphysics and Natural Philosophy of John Buridan*, Medieval and Early Modern Science 2 (Leiden: Brill, 2001), 195.

[38] Peter of Ailly, *Tractatus de anima*, ed. in O. Pluta, *Die philosophishe Psychologie des Peter von Ailly: Ein Beitrag zur Geschichte der Philosophie des späten Mittelalters* (Amsterdam: B. R. Grüner, 1987), 4.2 (26); Bartholomeus Arnoldi de Usingen, *Parvulus philosophie naturalis*

All these were representatives of 'modern' nominalist philosophy. While there were adherents of various views in the Renaissance period, the Galenist brain-model remained dominant.[39]

In dealing with the sight, Avicenna did not think that the visible form should change the translucent medium when coming to the receiving sense-organ in the body.[40] Most medieval authors deviated from Avicenna in assuming, like Aristotle, that the transparent medium is invisibly affected by the visible object and, furthermore, that there is a similar change in the sense organ when it receives the visible form without matter. According to Averroes, the soul receives the intentions of sensible objects and these intentions, the sensibilities of things, have a 'spiritual' existence in both the medium and sense-organ.[41] This became prevailing thirteenth-century terminology. While the spiritual presence of intentions did not change the medium and sense-organs in any empirical way, this was how the perceptible form of a sense-object was brought into contact with the sense-power which was then actualized through a non-qualitative change. It was also thought that the spiritual mode of being was congenial with psychic powers, which made their being causally changed by external things understandable. Aquinas summarized these ideas as follows:

> The senses, however, are passive powers, having the nature of being changeable by external sense-objects. The external cause of this change is what is *per se* perceived by the senses, and the sensitive powers are distinguished according to the diversity of that cause. Now, the change is of two kinds, one natural and the other spiritual. A natural change takes place by the form of the cause of change being received in the thing changed according to its natural existence, as heat is received in the thing heated. A spiritual change takes place by the form of the cause of change being received in the thing changed according to its spiritual mode of existence, as the form of colour is received into the pupil, which does not thereby become coloured. For the operation of the senses a spiritual change is required, whereby an intention of the sensible form is produced in the sense-organ. Otherwise, if a natural change alone sufficed for sensation, all natural bodies would sense when they undergo alteration. But in

(Leipzig, 1499), fol. 107^{r-v}; *Exercitium de anima* (Erfurt, 1507), $K3^{v}$–$K4^{r}$; Jodocus Trutfetter, *Summa in totam physicen* (Erfurt, 1514), $Cc3^{v}$–$Cc4^{r}$. Usingen (*Compendium naturalis philosophie* (Erfurt, c. 1507), $L2^{v}$) and Trutfetter ($Aa3^{v}$) also argue somewhat confusingly that perceptions are completed in the brain.

[39] For various views, see W. Pagel, "Medieval and Renaissance Contributions to the Knowledge of the Brain and its Functions" in F. N. L. Poynter (ed.), *The History and Philosophy of Knowledge of the Brain* (Oxford: Blackwell, 1958), 95–114; N. G. Siraisi, *Avicenna in Renaissance Italy: The* Canon *and Medical Teaching in Italian Universities after 1500* (Princeton: Princeton University Press, 1987), 315–324.

[40] Hasse 2000, 119–123. As for the potencies, Avicenna makes use of Aristotelian terminology: 'For when the influence of the sun (i.e., the ray) reaches the potential objects of sight, they become actual perceptibles and the eye becomes an actual percipient.' *Kitāb al-najāt*, trans. Rahman, 69.

[41] *Commentarium magnum in Aristotelis De anima libros*, ed. F. S. Crawford, 221, 277, 317; *Compendia librorum Aristotelis qui Parva naturalia vocantur*, ed. A. L. Shields (*De sensu et sensato*), 30–32. Averroes says that the sensible form is merely corporeal in the object, merely spiritual in the soul, and between these in the medium. For an early Latin formulation of Averroes's view, see *De potentiis animae et obiectis*, ed. D. A. Callus in "The Powers of the Soul: An Early Unpublished Text", *Recherches de théologie ancienne et médiévale* 19 (1952), 152.11–20.

> some senses there is a spiritual change only, as in sight, while in others there is not only spiritual but also a natural change, either on the part of the object only, or likewise on the part of the organ.[42]

Some authors took Averroes's idea of the modes of spirituality to refer to various degrees in which the intention may be freed from matter and corporeality.[43] While the spiritual mode of existence in the medium and the nerves could be associated with some kind of corporeity in this approach, Albert the Great and Thomas Aquinas treated the spiritual being of intentions as incorporeal. The presence of the intentions did not cause any natural change in the medium.[44] According to Aquinas, the spiritual changes in the medium show that lower corporeal things are to some extent endowed with a power of causation which is typical of higher immaterial substances.[45]

Even though the theory of spiritual change remained popular until seventeenth-century Aristotelianism, it was also criticized. William Ockham considered it too speculative to be taken seriously. In his view it is not less problematic to assume that an object directly activates a sense-power at a distance, without any spiritual change in the medium.[46] Ockham's suggestion did not find many adherents; later

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[42] *Summa theologiae* I.78.3. For spiritual change in Aquinas, see also J. A. Tellkamp, *Sinne, Gegenstände und Sensibilia. Zur Wahrnehmungslehre des Thomas von Aquin*, Studien und Texte zur Geistesgeschichte des Mittelalters 64 (Leiden: Brill, 1999), 56–129.

[43] See *Sentencia super II and III De anima*, ed. Bazán, 142, 252; *Lectura in Librum De anima*, ed. Gauthier, 402, 404; Peter of Spain (?), *Expositio libri De anima,* 184, 197–199, 238–240, 249–250. Albert the Great stated that in Averroes's view the intentions in the medium were subtly corporeal; *Summae de creaturis secunda pars, quae est de homine* 21.5 (207a). The corporeity of intentions was also maintained by Roger Bacon who attempted to combine the views of Avicenna and Averroes and Alhazen's theory of vision and perspective; see C. Tachau, *Vision and Certitude in the Age of Ockham: Optics, Epistemology and the Foundations of Semantics 1240–1345* (Leiden: Brill, 1988), 3–39, particularly 22–23. For medieval theories of vision and optics, see also D. C. Lindberg, *Theories of Vision from Al-Kindi to Kepler* (Chicago: The University of Chicago Press, 1976).

[44] Albert the Great, *De anima* II.3.6 (107.56–82); Thomas Aquinas, *Sentencia libri de anima*, ed. Gauthier, I.10 (50); II.14 (128); II.24 (169) and the variant of *Summa theologiae* I.78.3 in question 13 of *Quaestio disputata de anima*, ed. P. Calcaterra and T. S. Centi, *Quaestiones disputatae*, II (Turin: Marietti, 1965). For various modes of spiritual being in Albert, see *De anima* II.3.3–4 (101–102). Albert seems to move into an immaterial interpretation of the spiritual being in the medium in his commentary on *De anima*; see L. Dewan, "St. Albert, the Sensibles, and Spiritual Being" in J. A. Weisheipl, ed., *Albertus Magnus and the Sciences: Commemorative Essays* (Toronto: Pontifical Institute of Mediaeval Studies, 1980), 306–307. For Albert's views, see also N. H. Steneck, "Albert on the Psychology of Sense Perception" in J. A. Weisheipl, ed., 1980, 263–290.

[45] *Quaestio disputata de potentia*, 5.8, ed. P. M. Pession in *Quaestiones dispuatae*, II (Turin: Marietti, 1965); see also the discussion of immaterial light in Peter of Spain (?), *Expositio libri De anima,* 238–239, 278–279.

[46] William Ockham, *Quaestiones in librum secundum Sententiarum*, ed. G. Gál and R. Wood, *Opera theologica,* 5 (St. Bonaventure: St. Bonaventure University, 1981), q. 12–13, 272–276, 309; *Quaestiones in librum tertium Sententiarum*, ed. F. E. Kelley and G. I. Etzkorn, *Opera theologica,* 6 (St. Bonaventure: St. Bonaventure University, 1982), q. 2. For Peter John Olivi's earlier criticism, see Tachau 1988, 39–54; R. Pasnau, *Theories of Cognition in Later Middle Ages* (Cambridge:

authors who were influenced by Ockham did not follow him in this matter, but rather Buridan, who stuck to the theory of activating species in the medium.[47]

Early medieval discussions of internal senses were largely influenced by Avicenna, who argued that *common sense* receives all the impressions of the five senses and turns them into distinct acts of perception. As an internal sense, it can relate the sensible forms received through different senses to each other. *Imagination* retains the sensations, and a third sense can create various configurations of the sensible forms in imagination by combining and dividing them. This is called *imaginative* in animals and *cogitative* in human beings, whose rational faculty is prepared by it for receiving the emanation of the active intellect. The fourth power, called *estimative*, grasps the estimative intentions of things, such as hostility or dangerousness or other convenient and inconvenient aspects, which are not perceived by external senses. *Memory* is localized in the backmost ventricle of the brain. As a retentive power it stands in the same relation to estimation as imagination to common sense.[48] The same general classification of the internal sense faculties and their functions is found in Thomas Aquinas, with the qualification that the imagination and the imaginative power are regarded as one faculty (*phantasia* or *imaginatio*), as in Averroes, and the estimative power is called the cogitative power in human beings.[49]

Avicenna's theory of the internal senses is much more elaborated than that of Aristotle. Albert the Great tried to harmonize between Aristotle and Avicenna by distinguishing between the broad and the strict senses of the word *phantasia.* The broad (Aristotelian) sense covers the Avicennian functions from the common sense to the estimative power.[50] An anonymous commentary on *De anima* from the 1240s states that Avicenna's descriptions of the internal senses could be understood as pertaining to the functions of one internal sense which is called the common sense.[51] The question of whether there are several internal senses continued to be discussed by many authors including John Buridan, who argued for the view that there is only

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Cambridge University Press, 1997), 168–181; D. Perler, *Theorien der Intentionalität im Mittelalter* (Frankfurt am Main: Klostermann, 2002), 109–146. Both authors were adherents of direct realism. While Olivi argued for an non-Aristotelian theory of active sense, Ockham's view of the passive sense power was basically Aristotelian.

[47] John Buridan, *op. cit.* II.8; *Le Traité de l'âme de Jean Buridan*, ed. B. Patar, Philosophes médiévaux, 29 (Louvain-la-Neuve: Éditions de l'Institut Supérieur de Philosophie: Longueuil, Québec: Editions du Préanbule, 1991), II.8 (a work influenced by Buridan); Nicole Oresme, *Quaestiones in De anima* II.18–20; Peter of Ailly, *Tractatus de anima*, ed. Pluta, 46–51; Usingen, *Parvulus philosophiae naturalis* (Leipzig, 1499), 95^{r}–96^{r}; Trutfetter, *op. cit.* $Z6^{v}$–Aa^{r}, $Aa2^{rv}$.

[48] *De anima* IV.1, 1.4–11.50; IV.3, 37.19–40.57; *Kitāb al-najāt*, trans. Rahman, 30–31; see also Dominicus Gundissalinus, *Tractatus de anima*, 71–80. For the estimative faculty in Avicenna and later Latin author, see also D. Black, "Imagination and Estimation: Arabic Paradigms and Western Transformations", *Topoi* 19 (2000), 59–62.

[49] *Summa theologiae* I.78.4. While Aquinas argues that animals grasp the Avicennian estimative intentions by instinct and humans 'by means of certain comparisons', Averroes simply rejects these intentions. See Black (2000), 62–63; 66–68.

[50] *Summae de creaturis secunda pars, quae est de homine*, 38.4 (334a).

[51] *Lectura in librum De anima*, ed. Gauthier, 441–442.

the common sense with plural functions.[52] I shall not enter into further details of internal senses.

Many medieval authors accepted the realist Aristotelian view that perceptions are about the sensible forms the perceptibility of which is uniformly actualized in normal perceptions. This view involved the metaphysical conception of the formal identity between the sensible form in external objects and the form without matter which actualizes the sense-power. As already mentioned, there were, apart from Augustinian critics, authors who questioned the causality through the species in the medium in this context. Another new question pertained to the role of the perceiving subject. It was realized that the twofold existence of the species and its formal sameness do not explain how the content of a sensitive act is present to its subject. While Duns Scotus agreed with the causal view of how the sensible or intelligible forms came into the cognitive powers and how these were activated, he stressed the difference between receiving the form and forming an intentional act with respect to an object:

> The cognitive power must not only receive the species of its object, but also tend through its act toward the object. This second is more essential to the power, because the first is required on account of the power's imperfection. And the object is the object less because it impresses a species and more because the power tends toward it.[53]

Scotus tries to explicate the intentional nature of intellection by explaining that when the abstracted species activates the intellect and the consequent cognitive act is intentional, the external object of cognition, the species or common nature, is displayed to the intellect through a second act:

> The intellect is not merely really changed by the real object, in so far as this real species is imprinted there; it is also changed by the object through an intentional change, in so far as the object shines in the species, and this second change is the reception of intellection, being from the intelligible as intelligible and shining in the intelligible species, and this change is understanding.[54]

In receiving the 'shine' of the species, the intellect produces an intentional object, though this is not a new entity. This internal object is said to have intentional being or objective being, which could be characterized as the mental content of intellection.[55] Some commentators have found this an innovative attempt to distinguish between the representation in the sense of conformation theory and in the sense of the theory

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[52] *Questions on Aristotle's* On the Soul, third redaction II.22, 387–388. For the Latin discussion of Avicennian inner senses, see Hasse (2000), 141–153, and Black (2000).

[53] *Quaestiones super libros Metaphysicorum Aristotelis*, ed. R. Andrews, G. Etzkorn et al., Opera philosophica 3–4 (St. Bonaventure: The Franciscan Institute, 1997), VII.14, n. 29; translated by R. Pasnau, "Cognition" in T. Williams, ed., *The Cambridge Companion to Duns Scotus* (Cambridge: Cambridge University Press, 2003), 288.

[54] *Ord.* I.3.3.1, n. 386 (Vat. 3, 235).

[55] *Ord.* I.27.1–3, n. 54 (Vat. 6, 86), *Ord.* IV.1.2, n. 3 (*Opera omnia*, ed. L. Wadding (Lyon, 1639, repr. Hildesheim: Olms, 1968), vol. 8, 56); see also P. King, "Duns Scotus on Mental Content" in O. Boulnois et al. (eds.), *Duns Scot à Paris, 1302–1202*, Textes et études du Moyen Âge 26 (Turnhout: Brepols, 2004), 65–88.

of intentional object.[56] This idea of intentional content was developed further and applied also to perception by Peter Auriol and some other followers of Scotus.[57] Peter Auriol taught that the objective being and real being overlapped except in the exceptional cases of misperceptions and illusions, so that the distinction was not meant to imply a basic gap between appearance and reality, although it led to discussions of perceptual scepticism.[58] Nicole Oresme combined the conception of subjective content with the idea of active perception, arguing that similar species received by sense-organs could give rise to various perceptions depending on how the active sensory powers of people interpreted them.[59]

3 Concluding Remarks

The dominant medieval theory of perception was Aristotle's account of perceptual powers, which was first discussed as part of Avicenna's faculty psychology and then in commentaries on Aristotle's *De anima* and other psychological treatises. There were some variations in interpreting Aristotle, as well as critical approaches with a Neoplatonic slant the history of which in medieval discussions of perception has not been systematically studied. Following Averroes, medieval Latin commentators were particularly interested in the nature of the medium change and the reception of the sensory species without matter in Aristotle's theory. In spite of the various views of these 'spiritual' changes and species, it was taken for granted that the qualities of material things are mostly perceived as such and the perceivability of things is actualized in the sensitive soul as it is. Aristotelian perceptual realism involved the teleological idea that that perceptual powers and their extra-mental objects formed a relational whole in which the qualities of things actualised the corresponding sensory powers both of which were there waiting to be actualised. While some scholars, particularly Peter John Olivi, thought that the elaborated theory of the species in the medium threatened direct realism, this approach itself was usually not associated with such views. Further impulses in this direction could have come from early fourteenth-century interest in the subjective reception of sensory content and 'the objective being' of the intentional object of a sensory act, but these ideas were considered more or less compatible with Aristotelian theory.

Independently of how late-medieval thinkers interpreted perceptions, they commonly admitted that God could make people have illusory perceptions which they

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[56] See Perler (2002), 217–230; Pasnau (2003), 287–290; King (2004); L. Honnefelder, *Duns Scotus* (Munich: Beck, 2005), 39–40.

[57] See Perler (2002), 186–317.

[58] Peter Auriol, *Scriptum super primum Sententiarum*, ed. E. M. Buytaert, Franciscan Institute Publications, Text Series 3 (St Bonaventure, NY: The Franciscan Institute, Louvain: Nauwelaerts, Paderborn: Schöningh, 1956), d. 3, sect. 14, 696–698. For the discussion of perceptual scepticism in Nicholas of Autrécourt, see D. Perler, *Zweifel und Gewissheit. Skeptische Debatten im Mittelalter* (Frankfurt am Main: Klostermann, 2006), 327–363.

[59] See, e.g., *De causis mirabilium* 1.102–106, 2.3–7, 209–213; cf. 1.201–210, 2.75–86, 3.109–114.

could not distinguish from veridical ones. This was mostly regarded as a theoretical possibility which did not affect sensory realism.[60] Perhaps one could say that these were symptoms of uneasiness about the considerable difference between the existence and objective existence of things, which later took increasingly separate ways when the foundations of cognitive teleology began to be regarded as shaky at best.

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[60] See H. Gelber, *It Could have been Otherwise. Contingency and Necessity in Dominican Theology at Oxford, 1300–1350*, Studien und Texte zur Geistesgeschichte des Mittelalters 81 (Leiden – Boston: Brill, 2004), Ch. 7; Perler 2006, 192–205.

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Plotinus on Sense Perception

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For many people who know Plotinus primarily by hearsay he is firmly associated with otherworldly notions such as the One, Intellect and "emanation". While it is true that his writings have a lot to say about such topics, it may come as a surprise that they also contain quite a lot about mundane things generally and sense-perception, our present topic, in particular.[1]

Sense-perception in Plotinus can actually be approached from several different perspectives. I shall deal with the subject here by first presenting and briefly commenting on the most extensive text in Plotinus on sense-perception, *Ennead* IV.4.23, where he seems to lay out his views on the matter in a fairly organized way. Then I shall take up some particular topics that this and other texts give rise to.

1 Presentation of *Ennead* IV.4.23, 1–34

Plotinus sets out by noting:

> We must suppose that the perception (*aisthêsis*) of sense objects is for the soul or the living being an act of apprehension (*antilêpsis*), in which the soul grasps the quality (*poiotês*) attaching to bodies and takes the impression of their forms (*eidê*).
>
> (IV.4.23, 1–4)

This may be taken as a rudimentary sort of definition of sense-perception. It is worth noting that he says "the soul or the living being." The so called "living being" is the same as the composite (*synamphoteron*, *syntheton*) of soul and body.[2] Now, as Plotinus will argue as this chapter unwinds, sense-perception is evidently a function of soul that involves the body. This makes it by definition a function of the composite or living being: Functions that require both soul and body are referred to this entity

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[1] Sense-perception in Plotinus is treated much more fully in E. K. Emilsson, *Plotinus on Sense Perception* (Cambridge: Cambridge University Press, 1988) on which the account here is largely based.

[2] See H. Blumenthal, *Plotinus' Psychology* (The Hague: Nijhoff, 1971), 61–63 and Emilsson (1988), 31–32; 76.

S. Knuuttila, P. Kärkkäinen (eds.), *Theories of Perception in Medieval and Early Modern Philosophy,*

(cf. I.1.9, 15ff.). He however wishes to maintain that even if sense-perception necessarily involves the body, nevertheless it is the soul which strictly speaking perceives (see below). This may be the reason for the disjunctive statement "the soul *or* the living being". Plotinus continues:

> Well, then, the soul will either apprehend alone by itself or in company with something else. But how can it do this when it is alone and by itself? For when it is by itself it apprehends what is in itself, and is pure thought. If it also apprehends other things [i.e. sensibles], it must first have taken possession of them as well, either by becoming assimilated to them, or by keeping company with something which has been assimilated. But it cannot be assimilated while it remains in itself. For how could a point be assimilated to a line? For even the intelligible line would not assimilate to the sensible one, nor would the intelligible fire or man assimilate to the sense-perceived fire or man. ... But when the soul is alone, even if it is possible for it to direct its attention to the world of sense, it will end with an understanding of the intelligible; what is perceived by sense will escape it, as it has nothing with which to grasp it. Since also when the soul sees the visible object from a distance, however much it is a form which comes to it, that which reaches it, though it starts by being in a way without parts, ends in the substrate which the soul sees as color and shape with the extension it has out there.
>
> (IV.4.23, 4–19)

2 Aristotle and Plato in Plotinus' Account of Sense Perception

As this passage clearly reveals, Plotinus' conceptual apparatus concerning sense-perception is heavily Aristotelian. Let us consider the main elements: (1) Actual sense-perception is an activity of a power of soul – this is not explicit in this passage but see e.g. III.6.1, 2. Its actualization is a matter of being affected by the external object sensed. This affection is or results in what Plotinus describes as the reception of the form of the object (cf. lines 1–4). The form thereby assumes a kind of immaterial existence in the percipient's soul. As for Aristotle, what sense-perception achieves is to judge or discriminate (*krinein*) the object perceived (line IV.4.23, 43; III.6.1, 2 cf. Aristotle *De an.* 422a21; 424a6). Again, as in Aristotle, above sense-perception there is another power, imagination or representation (*phantasia*). This is not mentioned in our passage. This latter power is at work for instance in memory and discursive thought (see IV.3.29–31). All this of course sounds quite Aristotelian, though not everything is Aristotelian here. Aristotle, and even more prominently Alexander of Aphrodisias, have a notable doctrine about the special senses, i.e. sight, hearing, and the senses of touch, taste, smell, and the difference between these and a common sense, which senses sensible features that are not peculiar to a given sense.[3] This common sense has dropped out in Plotinus and he really doesn't operate with a doctrine about the special sensibles either. For him there is just one power of sense perception. I shall return to this topic below.

[3] For a discussion of Aristotle and Alexander in relation to Plotinus and references, see Emilsson (1988), 94–101.

There is not much in the details of Plotinus' account that is distinctively Platonic. As Platonic, however, must count the underlying strong dualism of body and soul. This is instantiated in our passage by the difficulties Plotinus sees in adjusting the soul, which is intelligible in its nature, to the sensible. Plotinus is acutely aware that sense-perception creates difficult problems for this dualism. This is so first of all because sense-perception seems to involve a crossing of the ontological gap between sensible and intelligible natures: Sense-perception starts out there in an extended body and ends in the incorporeal soul. The problem is made even worse by the fact that the causal order in this case seems to start from the external body; thus, sense-perception threatens to be a case of the lower acting on the higher, which would constitute an exception from the general order of things according to Plotinus: The body should not affect the soul. His doctrine of sense-perception is very much influenced by his concern to avoid this conclusion, while at the same time respecting the evident facts. Seen in this way, Plotinus' views on sense-perception present a mixture of Platonic and Aristotelian elements (with some Stoic flavors) that is characteristic of him generally. And, which also may be said to be characteristic, the outcome is something peculiarly Plotinian.

3 Perception Between Sensible and Intelligible Natures

We see in our passage an instance of how Plotinus conceives of it as a problem to explain how an immaterial soul which by its own nature only contemplates intelligibles can come into contact with sensible objects at all. Furthermore, we see here two characteristic aspects of Plotinus' view, namely that what is perceived are the qualities of the object and that sense-perception essentially involves cognizing these objects as extended. The point of the last sentence in the quote, which says something about the form being partless in the soul but ending in the external extended object, is, I think, that in sense-perception we evidently see things in extension; sense-perception is cognition of sensibles, and sensible items are indeed extended! The soul itself, however, cannot have anything to do with extended form. Hence, something else is needed in addition to the soul and the extended object. This is confirmed by the way he continues the passage:

> There cannot, then, be nothing but these two things, the external object and the soul, for the soul would not be affected. But there must be a third thing which will be affected, and this is that which will receive the form. This must be sensitive to the affections [of the external object] and similarly affected and of one matter with it; and this is what must be affected, and the other [the soul] what is to know; and its affection must be of such a kind as to retain something of that which produced it [the external body] but without being identical with it: As it is placed in the middle between the producer of the affection and the soul, it must have an affection which lies between the sensible and the intelligible, a proportional mean somehow linking the extremes to each other, with the capacity both of receiving and announcing, suitable to be assimilated to each of the extremes. For since it is the organ of a kind of knowledge, it must not be the same either as the knower or what is going to be known, but suitable to be assimilated to each, the external object by being affected, and to

> the internal knower by the fact that its affection becomes a form. Then, if we are saying anything sound, sense perceptions must take place through bodily organs.
>
> (IV.4.23, 19–34)

I wish to make several commentaries on the content of this and the previous lines that I have cited.

(1) We saw in our main passage that Plotinus speaks in general terms of the necessity of an assimilation (*homoiōsis*) of the knower to the known. As the chapter unfolds we see that this assimilation is the same as an affection (*pathos*) of the percipient originating in the external object and that the bearer or subject of this affection is the organ of sense. That the affection is some kind of assimilation indicates that the affection is not just any kind of impact that the external body produces on the organ but an affection that "retains something of the producer." Plotinus does not specify the nature of the affection (e.g. whether it is an ordinary physical sort affection such as heating or cooling, where one object takes on the quality of another, or whether he conceives of the affection/assimilation in some different way). (2) We may gather from what we have seen so far that there are at least three kinds of forms involved in sense perception. (a) Firstly, there is the form in the external object itself. We see in lines 3–4 that this is identified with a quality of the object. So "form" here is used broadly and not specifically in the sense of substantial form. (b) Secondly, there is the form which the organ of sense takes on, i.e. the affection. (c) Thirdly, there is the form in the soul. As the passage makes clear, this is something different from the affection: The latter belongs to the sense organ and is somehow transformed into the form in the soul which is an intelligible rather than a sensible item. However, even if these three kinds of forms are different in that the first is a sensible form, the second somehow intermediate between sensible and intelligible, and the third intelligible, I believe there is a sense in which they can be said to be identical, i.e. it is a question of the *same* form at different levels of intelligibility.

Let us address the question of what the nature of the affection of the sense-organ is. Because Plotinus insists that sense-perception must take place through bodily sense-organs, one might think that the affection the organs undergo must be a physical affection of the kind familiar from ordinary physical processes such as heating or coloring. There are, however, strong reasons that count against this interpretation. We see within our text that the affection is supposed to have a status intermediate between sensible and intelligible nature: "It must have an affection which lies between the sensible and the intelligible", he says. This does not square well with a view that takes the affection of the organ to be just a physical process or product in the agent, for the problem Plotinus identifies here is not that of internalizing the form of the perceptible object in the sense of bringing it spatially closer to the perceiving soul. This is definitely not the relevant sense of the word "intermediate" here. The location of the affection in the percipient's body would not solve his problem of explaining how the soul, being essentially a thinker of intelligible things, could come to know sensibles. To judge from what he actually says we should indeed expect a kind of affection that is somehow intermediate between sensibles and intelligibles. This seems to be confirmed by other passages.

4 Visual Transmission

I shall now enter into a digression having to do with Plotinus' views on visual transmission, on what happens in between the eyes and the ears, and the objects seen and heard. His views on this are indeed relevant for his view on perception in general. In the third treatise of "The Problems of Soul" Plotinus focuses on just this question, the bulk of what he says being about vision. He rejects theories of visual transmission that postulate an affection of a medium between the eye and the object of vision and likewise he rejects theories, presumably Stoic, that suppose that some kind of cone reaches out from the eye and to the object. He advances several arguments for this. It would take us too far afield to consider all of these, but I shall highlight three criticisms. First let me consider those who postulate a propagation of the affection through the air to the percipient's eyes. The first argument says that if vision happens by means of a propagation of affection from the object to the eye such that first that part of the medium closest to the object is affected, then the part adjacent to this one and so on till the affection meets the eye, there is no explanation of how we can see large things like a whole mountain (IV.5.3, 28ff.). For evidently, only a tiny portion of the affection made by the mountain on the air next to it can enter the pupil, which, as everyone knows, is quite small, much smaller than a mountain. In the second argument Plotinus says that if vision takes place by means of propagation of affection in this way, we would not perceive the sensible objects themselves but rather we would perceive the affection in the air next to the eye. And this is evidently false because what we do perceive are the external sensible objects themselves (IV.5.2, 50ff.). Whatever we wish to say about the conclusiveness of this argument, it reveals an interesting feature of Plotinus' view on sense-perception, namely that he was an ardent direct realist about it: what we perceive are the external objects themselves, not copies of them in the air or something else.

The third argument I wish to mention is directed against the cone theory which supposes that something goes out from the eye, a cone in a state of tension for instance, and hits upon the object; according to the Stoics this is supposed to work somewhat like the staff a blind persons use to orientate themselves. Plotinus says among other things about this that this doctrine implies that vision is indirect and takes place by means of reasoning. The idea is, I take it, that people who use a staff to orientate themselves reason themselves to conclusions about the environment but are not directly in contact with the qualities of the surrounding objects. Again, we may wish to question some of the presuppositions of the argument, but in any case it shows that Plotinus thinks of sense-perception as an immediate grasp of the features of sensible objects.

Before we leave the topic of visual transmission, I should say something about how Plotinus wants to solve the problem himself. Instead of either theories that invoke the propagation of affection from object to eye or theories that propose something going out from the eye to the object, he suggests transmission by means of *sympatheia*.

Sympatheia was a principle used by the Stoics to account for phenomena that apparently involve action at a distance. As for Plotinus, it depended on the unity of soul between the parties of sympathetic affection. Examples of it are the influences of things in the heavens on things on Earth and the workings of magic and divination.[4] According to our extant sources, the Stoics however did not invoke *sympatheia* to account for vision or hearing. The Stoic doctrine of *sympatheia* may owe something to Plato, in particular to the *Timaeus*. At least the spirit of it seems to be present in the *Timaeus* account of the world and human beings' relations to it. Moreover, in *Timaeus* 45c Plato uses a term similar to *sympatheia* to account for vision: The eye is said to be *homoiopathes* to light, which is what is directly seen. This may well have been an important source of Plotinus' theory, even if his account seems to be rather different from the account of visual transmission in the *Timaeus*, where vision is explained by means of a coalescence of the external light and a light coming out of the eyes. There are no traces of this in Plotinus.

Unfortunately, Plotinus is very brief about the workings of *sympatheia*. What is clear though is that *sympatheia* depends on the unity of the soul in the world and the soul in the recipient: Somehow because the eye and the object seen share one soul, the eye is able to assimilate to the affection of the object at the distance at which it is placed. Some aspects of what he says about this may suggest that he wishes to account for the distant senses, seeing and hearing, on analogy with internal sensation within the body of a single organism in the ordinary sense. He doesn't make this analogy explicitly though. In any event, the little Plotinus says about the workings of *sympatheia* in vision tends to confirm what he has already intimated, namely that vision is a direct contact with the external qualities of bodies. He is very keen on insisting that it is genuinely a distant perception: We see the things out there directly as they are.

5 The Nature of Sensory Affections and Plotinus' Direct Realism

With all the preceding in mind, I wish to return to the nature of the affection of the sense organ, which we saw to be something intermediate between the sensible and the intelligible. There are two difficult questions that arise with respect to it. First, what is this affection really, what does it correspond to in our experience? The second is, how can Plotinus maintain the direct realism about sense-perception that he evidently wishes to maintain, while at the same time claiming an intermediary role to the affection? For it is the soul which does the perceiving, and the account of IV.4.23 seems to suggest that the soul cannot come into a direct contact with the external, extended sensible objects; it has to do so via an intermediary, the sensory affection.

Let us consider the first question first. So what is the sensory affection? In my dissertation and later book on *Plotinus on Sense Perception*, I inquired into this

[4] Cf. Sextus Empiricus, *Adv. Math*. IX.79; Cicero, *Div.* II.34 and *Nat. D*. II.19.

matter and came to the conclusion that the sensory affection is something like a sensation. More specifically I maintained that the affection in the case of vision is the phenomenal appearance of colors in the visual field. The reason for this suggestion is twofold. On the one hand, Plotinus wishes to distinguish between the affection in perception and an active part played by the soul itself which he identifies the perception itself with. So one naturally looks for an item that may reasonably be said to be passively received. On the other hand, as we saw already, the affection must be something that may reasonably be said to be intermediate between the sensible and the intelligible. It seemed to me twenty years ago, and I have seen no good reason to change my mind about this, that indeed the phenomenal appearance of the proper sensibles is a plausible candidate. For what the organ takes on is the quality of the object. In the case of vision it is the eye taking on the object's light or color. We also have seen reasons for rejecting the suggestion that the eye literally takes in the color of the object in the sense that something in the eye really becomes visibly green when a green field of grass is seen. Furthermore, it seems to me that, say, the phenomenal color of the object of vision is a plausible candidate for what may be meant by the form, in the sense of the quality, of the object without its matter, even if some other sensible interpretations of this phrase can no doubt be produced. Plotinus' direct realism about sense-perception, which we shall turn to next, would also seem to support some such understanding of the notion of affection. So at least until I hear a better suggestion that is compatible with the evidence of the texts, I shall stick to this one.

In our main passage, IV.4.23, there is no hint that what we actually perceive is anything other than the external object itself. In other passages the point is made very explicitly. In the discussion of visual transmission in IV.5 that we considered above the point is made that if visual transmission takes place by means of the propagation of affection of the air, we should see the affection of the air next to the eye and not the distant object that we evidently see. In the short treatise "On Sense-Perception and Memory" Plotinus' commitment to direct realism is even more explicit. Arguing against the view that in vision we receive impressions (*typoi*) of the things seen, he says:

> Most important of all: if we received impressions of what we see, there will be no possibility of looking at the actual things we see, but we shall look at images (*indalmata*) and shadows (*skias*) of the objects of sight, so that the objects themselves will be different from the things we see.
>
> (IV.6.1, 29–33)

The impressions at stake here are evidently physical impressions "like the mark of a seal-ring on wax" (IV.6.1, 20–21). Now, as we saw in connection with our lead-passage, IV.4.23, Plotinus himself believes that perception is a matter of receiving some kind of impression of the object, though he denies that the impression in question is at all like the marks of a seal-ring (III.6.1, 8–12; IV.3.26, 29–33). This in itself constitutes a further argument against interpreting the affection of the percipient as an ordinary physical affection. The problem raised by the second question above however remains: How can Plotinus maintain his direct realism together with what

he says about the intermediary role of the sensory affections? Evidently he thought that his notion of impression/affection is somehow saliently different from that of the proponents of physical impressions so that it won't give rise to the charge of antirealism. There may indeed be a problem here. I don't think, however, that the problem is any more serious for him than any other direct realist. It may in fact even be slightly lighter than it is for most such realists, if we are willing to grant Plotinus some metaphysical assumptions that lie behind his account.

The metaphysical assumptions, which we may or may not share with him, are the ones I hinted at earlier, that the form in the object of sense, the form the sense-organs take on, and the form finally received by the soul are in some sense one and the same form but at different stages of fragmentation or multiplicity. That is to say, the color that the sense-organs take on, though different from the color as it exists out there in the mass of the extended object, is nevertheless ontologically speaking the same color as the one in the object. The internalization of the form is not a matter of having a new entity inside one's soul but rather a matter of, as it were, promoting the external form to a more intelligible status. So if the form the eyes take on is the very form of the external object, though in a different ontological mode, and if the soul is aware of this form as it exists to the eye, we do indeed see the very things themselves. Or so Plotinus wishes to have it, if my account of his doctrine holds.

In another sense, however, we do not perceive the things themselves at all, but mere images of them. What I have in mind is just the well known Platonic position that the sensible object is not the real object at all but a mere image of an intelligible archetype. Plotinus once notes, in V.5.1, "what sense-perception grasps is an image (*eidōlon*) of the object itself, which remains outside." This passage has by some scholars been interpreted as evidence of antirealism about sense-perception of the sort Plotinus elsewhere forcefully resists, i.e. an antirealism which maintains that all we ever sense is an image that pertains to us as opposed to the external object. But this is not the way I read this passage. Plotinus remarks both in the context of the passage and elsewhere that the qualities of sensible things such as colors and shapes are images of the real things. And we do know that these are the features of things that we immediately perceive through the senses. The thing itself that the color or shape is contrasted with need, however, not be the very Platonic form of the object itself. Plotinus operates with intelligible items at least at two levels. There are the ultimate paradigms of everything in the divine intellect and there are manifestations of these that pertain to the World-Soul which produces the sensible realm. It seems to me most plausible to take "the thing itself", with which the perceptible features are contrasted with as mere images, to be the immediate intelligible cause of these features, a cause that pertains to the World-Soul or nature (*fysis*). So when he says that sense-perception grasps only an image and the thing itself remains outside, the meaning is that sense-perception only grasps the superficial expression of the intelligible cause of the object which remain outside the reach of the senses. I readily admit that this is a debatable interpretation, but this is how I read the relevant passages.[5]

[5] A criticism of my views on this topic by Andrew Smith is forthcoming.

6 Sense-perception and Concepts

Plotinus insists that the part played by the soul itself in sense-perception is an active rather than a passive role. This is not explicit in our main passage but in III.6.1, 1–2, for instance, he says that sense-perceptions are not affections but "activities and judgments concerning affections" (*energeiai peri pathēmata kai kriseis*). Parting from what was suggested earlier that the affection part, in the case of vision, is played by the phenomenal presence of colors to the eyes, something conceived of as passively received, we must suppose that the active part consists of judgments of the sort "this is a man" (cf. V.3.3, 1ff.) or "this is black." At any rate, Plotinus' position does not seem to be that the judgments about what is the case in our sensible surroundings are passively forced upon us. The soul has interpretation to do. In fact it seems that anything having to do with the application of concepts to what is given by means of affection is an active work of the soul.

This leads to a set of new questions: On the basis of what does the soul make perceptual judgments? If such judgments involve, as indeed seems plausible, the use of concepts, how are these concepts acquired? As we have seen, they are surely not given by the sensitive affection as such. How is it that we have them then?

There is less textual evidence in this area than one would like to have. In the continuation of our main passage, however, Plotinus makes some instructive suggestions. He says:

> The organ [of sense] must be either the body as a whole or some member of it set apart for a particular task; an example of the first is touch, of the second, sight. And one can see how the artificial kinds of organs are intermediaries between those who judge and what they are judging, and inform the judger of the characteristics of the object under consideration; for the ruler (*kanōn*) acts as a link between the straightness in the soul and that of the wood.
>
> (IV.4.23, 36–43)

And in the same vain in I.6., "On Beauty" he says in connection with perceptual judgments of beauty that not only sense-perception itself but the rest of the soul too judges beauty by "fitting the beautiful body to the form which the soul has in itself and using this for judging beauty as we use a ruler for judging straightness" (I.6.3, 3–5). So we possess forms such as "straightness" and "beauty" prior to perceiving straight and beautiful things and make use of these in making perceptual judgments.

Plotinus never tells any abstraction story about the acquisition of concepts. Nor does he explicitly evoke Plato's theory of anamnesis. He clearly takes for granted, however, that access to the realm of Platonic Forms is an innate capacity in human beings. That does not mean, however, that whenever we think, we think of, and by means of, the very paradigmatic Forms themselves. Plotinus distinguishes between intellection (*noēsis*) and discursive thought (*dianoia*). Only the former has the Forms themselves as its object. Discursive thought, which is the ordinary sort of thinking we are engaged in most of the time, depends on intellection. It involves "unfolding" or breaking up the unified structure of Intellect into less unified entities, presumably

primarily sentences or propositions.[6] This is not to say that we are aware of this process, our discursive thought depends on intellection nevertheless. The forms directly involved in perceptual judgments are no doubt rather forms at the discursive level than at the level of Intellect, though, as has been said, the former ultimately depend on the latter.

7 Sense-perception as Evidence Against Physicalism

There is one more aspect of Plotinus' theory of sense-perception that I would like to pursue. Plotinus was as one may expect a Platonist a dualist about sense perception. His dualism is even sharper than Plato's own. We do find a series of arguments against the position that the soul is a body of some sort. In fact both Stoics and Epicureans had maintained that the soul is corporeal, and Plotinus explicitly argues against them. In fact he argues not only that the soul is incorporeal but, along with the view which the Peripatetics hold, that it is an incorporeal substance.

Now sense-perception plays a crucial role in some of his most interesting antiphysicalistic arguments. The issue is of course big and complicated and in what follows I shall only sketch the main idea.[7] Plotinus understands a body to be an item in space with different spatial parts. That is to say, if something is a body, its parts are differently located and none of its parts can occupy more than one place. Anything that has features that defy this restriction cannot be a mere body. Given this understanding of what a body is, Plotinus argues both from vision and internal sensation such as pain that the soul cannot be a body (IV.2.2; IV.7.6–7). For the evident unity of consciousness in sense-perception shows that the soul as a whole is present to the different parts of the body. Take the sight of a face as an example. I see the forehead, two eyes, the nose, the mouth etc. I see all these different things. It is evidently not the case that something in me sees the nose and something else sees the mouth. In that case the unity of perceiving subject which we directly experience would be lost. It is the very same thing that sees both. This cannot be accounted for without presuming that the self-same soul is present as a whole to different spatial points. But nothing of the nature of body can be such and hence the soul cannot be a body.

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[6] R. Sorabji, "Myths about Non-Propositional Thought" in M. Schofield and M. C. Nussbaum (eds.), *Language and Logos* (Cambridge: Cambridge University Press, 1982), 295–314 and R. Sorabji, *Time, Creation and the Continuum* (London: Duckworth, 1983) arguing against A. C. Lloyd, "Non-Discursive Thought – An Enigma of Greek Philosophy", *Proceedings of the Aristotelian Society* 70 (1969–1970), 261–274, questions the view that intellection is non-propositional. But see Lloyd's response ("Non-Propositional Thought in Plotinus", *Phronesis* 31 (1986), 258–265) and my "Discursive and Non-discursive Thought" in T. M. Larsen, H. Fossheim, and J. R. Sageng (eds.), *Non-Conceptual Aspects of Experience* (Oslo: Unipub forlag 2003), 47–66.

[7] For a fuller treatment see Emilsson (1988), Chapter V and Emilsson, "Plotinus on Soul-Body Dualism" in S. Everson (ed.), *Psychology, Companions to Ancient Thought* (Cambridge: Cambridge University Press, 1991).

Observations about the unity of the perceiving subject had been made before Plotinus. In the *Theaetetus* Plato famously remarks that the senses are not like warriors in a Trojan horse, each with its own sensations not shared by the others. Aristotle and Alexander too have things to say about the subject. But to my knowledge nobody before Plotinus attempted to use the unity of the perceiving subject as an argument against physicalism.

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The Stoics on Sense Perception

Håvard Løkke

In this paper I describe and discuss the Stoics' views and arguments on three questions, namely (i) how one perceives things, (ii) why sense impressions under favourable conditions are reliable, and (iii) how the cognition one attains by means of one's senses can be used to achieve further cognition of things one has not perceived. My main concern is with the first issues, i.e., with reconstructing as much as our sources allow of the Stoics' own description of sense perception (αἴσθησις) as such.

1 Sense Perception

One of our most informative sources of Stoic epistemology in general is a brief but comprehensive survey by Cicero (*Ac*. I.40–42), based on the distinguished philosopher Antiochus of Ascalon (ibid. 35). The pivotal notion in this survey is that of sense perception. In fact, Cicero starts by saying about Zeno, the founder of the Stoa, that he

> made some new statements about sense-perceptions. . ., regarding them as compounded out of a sort of blow provided from outside (this he called an impression). . . but adding to these impressions received as it were by the senses the mind's assent, which he took to be located within us and voluntary. (*Ac*. I.40; trans. Long & Sedley 40B)

It is true that the Stoics in most contexts operated with a simple distinction between impression and assent, e.g. when they emphasized, as Cicero does in the passage just quoted, that one is responsible for everything one does and believes, it being up to oneself to give or withhold assent to any impression one has (Sextus Empiricus, *Adv. Math*. VIII.397; Plutarch, *Stoic. Rep*. 1055f–1056a). But when they inquired specifically into the nature of sense perception, the Stoics distinguished more accurately between three elements or aspects, namely (i) the affection (πάθος) suffered on a sense organ, (ii) the forming of an impression (φαντασία) on the basis

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of this affection, and (iii) the giving of assent (συγκατάθεσις) to this impression.[1] These are separate elements since it is possible to suffer a sensory affection without forming an impression on the basis of it (Sextus Empiricus, *Adv. Math.* VII.232), and also possible, of course, to have an impression without giving assent to it. But to the extent one is aware of the way one's senses are affected and takes one's impression to be veridical, the three elements are not separate, but aspects of one and the same act.

My concern is with the first two aspects of a perceptual act – the sensory affection and the impression – and the relation between them. In order to get clearer on which views the Stoics hold on this subject, and some of the problem they meet in this connection, I will start by giving a very brief outline of some main tenets in their physics and psychology.[2]

The world, according to the Stoics, is one big continuous body (Diogenes Laertius VII.140), made up by two principles, one active and one passive. In the created world, the active principle can be called 'πνεῦμα' (which in turn is made up of fire and air), and the passive principle can be called 'matter' (which is made up of earth and water) (Nemesius, *Nat. Hom.* 5, p. 52.18–19).[3] A complete mixture of πνεῦμα and matter is found both in the world as a whole and in each single object in it (Plutarch, *Comm. Not*. 1085b–e). By moving through matter in a peculiar way πνεῦμα is giving natural objects their substantiality and qualities (Plutarch, *Stoic. Rep.* 1054a–b; Nemesius, *Nat. Hom.* 2, p. 18.6). For example, a white horse is a lump of matter run through by πνεῦμα which is making it the sort of object it is and providing it with the qualities it has. Ships and other artificial objects are also qualified in virtue of currents of πνεῦμα (Simplicius, *Cat*. 214.33–34).

The soul, too, is a body, namely particularly dry and warm πνεῦμα. A soul consists of eight parts: the five sense organs, a part producing voice, a part responsible for reproduction, and the so-called leading part (τὸ ἡγεμονικόν) (Ps.-Plutarch, *Plac*. IV.21.1–4). The sense organs are portions of πνεῦμα spreading out from the leading part of the soul, like the tentacles of an octopus (ibid.), thus enabling the leading part to receive information of pneumatic currents that impinge on its sense organs from the external world. It is in virtue of the world and the soul being run through in this way by πνεῦμα that all living creatures can perceive objects and their qualities.

But the soul of a human adult differs markedly from that of an animal. An infant's leading part is like an animal's in that it has two abilities: it can form impressions

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[1] For the sensory affection as an aspect of the impression, see, e.g., Ps.-Plutarch, *Placita* IV.12.1. (I use Diels' edition of this text in his *Doxographi Graeci* (Berlin: De Gruyter, 1965[4])). Needless to say, perhaps, this is not the technical Stoic sense of 'πάθος' according to which a 'πάθος' is an erroneous value-judgement (Plutarch, *Virt. Mor*. 449d).

[2] The most important texts on these issues are collected and discussed in A. A. Long & D. N. Sedley, *The Hellenistic Philosophers* (Cambridge: Cambridge University Press, 1987), sections 44–55, especially 47 and 53.

[3] I use M. Morani's edition of Nemesius, *De Natura Hominis* (Leipzig: Teubner, 1987), and refer to sections as well as to pages and lines in this edition.

and have impulses (ὁρμαί). But humans differ from animals in that they acquire notions of things (Ps.-Plutarch, *Plac*. IV.11.1–3). When one, at the age of fourteen, has acquired a sufficiently rich set of notions, one's leading part is transformed into a mind (διάνοια), which has two added abilities: it operates with reason (λόγος) and it can give assent (Stobaeus, I.368.19–20).[4] So the mind of a normally developed adult seems to differ from the leading part of a child or an animal in two main respects. For one thing, it seems clear that it is only when one has become rational that one has acquired the ability to give assent, at least the sort of assent that one is responsible for giving.[5] Moreover, all the impressions and impulses a mind forms are rational impulses and rational impressions, the latter of which are also called 'thoughts' (νοήσεις) (Diogenes Laertius, VII.51). I shall say nothing about how animals and infants perceive things and act in relation to them.[6] I focus only on the question of how adults perceive things, looking first at the causal part of the story.

1.1 The Physical Aspect of Sense Perception

We have seen that each sense impression an adult forms, has a physical aspect by virtue of which it is caused by something in the world. In order to describe more accurately the Stoics' views on this issue, we need to put together a number of texts by different ancient authors. First, we must look at the Stoics' definition of sense perception, recorded, e.g., in the following passage:

> Sense perception is called, according to the Stoics, both the πνεῦμα that is running from the leading part to the senses, and the cognition through them, and the constitution with regard to the sense organs, in respect to which some become blind. And the activity, too, is called sense perception (Diogenes Laertius, VII.52; trans. by the author; see also Ps.-Plutarch, *Plac.* IV.8.1; Nemesius, *Nat. Hom.* VI, pp. 56.24–57.5)

Perhaps modeled on Aristotelian definitory practice, the author of this passage lists four different ways in which the Stoics take 'sense perception' to be used, designating, among other things, the potentiality or ability one has to perceive things in virtue of being equipped with sense organs (Stobaeus, I.352.13–14), and the actuality or activity of forming sense impressions. What I now focus on, however, is the specific Stoic sense in which sense perception is characterized in terms of currents of πνεῦμα.

The definition quoted above refers only to πνεῦμα running from the mind to a sense organ, presumably because this current of πνεῦμα is necessary for a sense

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[4] I use C. Wachsmuth's two-volume edition of Stobaeus, *Eclogae physicae et ethicae* (Berlin, 1884), and refer to it by volume, page and line.

[5] Here I follow, e.g., B. Inwood, *Ethics and Human Action in Early Stoicism* (Oxford: Clarendon Press, 1985), 77–78; and M. Frede, "The Stoic Conception of Reason" in K. Boudouris (ed.), *Hellenistic Philosophy* ii (Athens: International Center for Greek Philosophy and Culture, 1994), 57.

[6] There is a good discussion of these issues in C. Brittain, "Non-Rational Perception in the Stoics and Augustine", *Oxford Studies in Ancient Philosophy* (2002), 256–274.

impression to arise. But since sense impressions are of external objects, it is not sufficient to specify the internal current of πνεῦμα. The sort of external current of πνεῦμα involved in forming a visual impression of something is specified in the following passage:

> Seeing takes place when the light between the visual faculty and the object is stretched into the shape of a cone …. The air adjacent to the pupil forms the tip of the cone with its base next to the visual object. What is seen is reported by means of the stretched air, as by a walking-stick. (Diogenes Laertius, VII.157; trans. Long & Sedley 53N; For the stick analogy, see also, e.g., Alexander of Aphrodisias, *In De An.* 130.16–17; Galen, *PHP* VII.5.41; VII.7.20)

If we put the two last-quoted passages together, we get a description of the physical event taking place when we see things, all the way from the object of perception through the eyes to the mind. Such a description is also recorded in two ancient texts. One is a section from the *Placita* preserved among the works of Plutarch, but attributed by some recent scholars to Aëtius:

> Chrysippus [says] that we see in virtue of the tensioning of the intermediate air, it having been pricked by the optical πνεῦμα that runs from the leading part to the pupil, and in virtue of the attention directed at the surrounding air, stretching it into the shape of a cone, provided the air is of the same kind. And pouring forth out of the eyes are fiery rays, not dark and misty ones. (Ps.-Plutarch, *Plac.* IV.15.3; trans. by the author)

The other is a passage from Calcidius' commentary on Plato's *Timaeus*:

> The Stoics attribute the cause of seeing to the tension of the innate πνεῦμα whose effigy they want to be like a cone, for as this has proceeded out of the inner eye (which is called 'the pupil') and from this tenuous beginning becomes more solid the further it extends, the beginning having become thick, then [they want] the visual illumination that is located in the domain of what is seen to be poured out and diluted all over. (Calcidius, *Ad Tim.* 237 (von Arnim *SVF* ii 863); trans. by the author)

These are difficult texts based on physical theories that I believe we cannot today reconstruct in detail.[7] For one thing, it is not clear how we are to understand the pricking and attending mentioned in the Ps.-Plutarch passage. The idea may be that, when we see something, the mind causes the internal, optical πνεῦμα to move out of the eyes and somehow get in touch with the external air, thus creating a 'tenuous beginning' to the act of seeing, as Calcidius says. This fits the fact that the Stoics can speak of the mind as that which causes sense impressions (Ps.-Plutarch, *Plac.* IV.21.1). Further, the attention in virtue of which the external air is being "stretched into the shape of a cone", may have to do with the πνεῦμα becoming 'solid' or 'thick', as Calcidius says. This seems to be the point conveyed in the stick analogy.

Perhaps we get an adequate conception of the process involving the pricking and attending if we imagine that πνεῦμα is like a rubber band. On this understanding, what the mind does when one sees something is, first, to "hook on to the rubber

[7] There is a good discussion in D. Hahm, "Early Hellenistic Theories of Vision and the Perception of Color", in P. K. Machamer et al. (eds.), *Studies in Perception* (Columbus: Ohio State University Press, 1978), 65–69.

band" that lies between one's eyes and the visible object and, then, to start "pulling" this "rubber band" so that it eventually becomes taut enough to be able to convey movements accurately from one end to the other.

There is also the question of how we are to understand the Stoics' view that fiery rays are flowing out of the eyes when one sees something. The view that visual rays are flowing out of the eyes was shared by a number of the early Stoics' contemporaries, including Euclid. But the view that these rays are *fiery* seems only to have been suggested in the *Timaeus* and advocated by Theophrastus.[8] Maybe the Stoics conceived of the out-flowing rays as dry and warm πνεῦμα flowing from the mind through the eyes when one is 'hooking on to' and 'pulling' the external air. In any case, they regard the outflow of rays from the eyes as cognate to that from the sun, a relationship alluded to in the Ps.-Plutarch passage quoted above with the words 'provided the air is of the same kind.' This also implies a plausible empirical requirement, namely that seeing occurs only if the external air gets illuminated by the sun, or some other source of light.

So since πνεῦμα is causing each object in the world to be the object it is and have the qualities it has, and since the mind is particularly dry and warm πνεῦμα, the mind is cognate to the world and can for that reason make the internal, optical πνεῦμα 'hook on to' the external air, thus starting the process of stretching the external air into the shape of a cone, which then becomes a vehicle for transmitting pneumatic currents from the visible object through the eyes to the mind. This seems to be as accurate a description of the causal mechanism of seeing things as our sources enable us to give. But as we have seen, the Stoics also hold that all the impressions one has as an adult are rational impressions, i.e., thoughts. This is what we should look at next.

1.2 The Rational Aspect of Sense Perception

Sextus tells us what the Stoics take a rational impression to be like:

> They [the Stoics] say that a λεκτόν is what subsists in accordance with a rational impression, and a rational impression is one in which the content of the impression can be exhibited in language. (Sextus Empiricus, *Adv. Math*. VIII.70; trans. Long & Sedley 33C)

This is also a difficult text. The overall idea seems to be that, when one has a rational impression, one can say or think how the object of the impression appears to oneself to be, and one can do this in virtue of the fact that one's impression has a λεκτόν subsisting in accordance with it. So in order to understand what rational sense impressions are like, we need to look closer at the Stoic notion of λεκτόν.[9]

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[8] For Euclid and Theophrastus, see Hahm, *op. cit*., 62–64, with n. 17. See also the *Timaeus* 45b–d.

[9] Important texts on this issue are collected and discussed in Long & Sedley, *op. cit*., sections 33–5. The most thorough analysis is A. Schubert, *Untersuchungen zur stoischen Bedeutungslehre* (Göttingen: Vandenhoeck & Ruprecht, 1993).

A λεκτόν is something incorporeal, literally 'what can be said'. The Stoics distinguished between two main kinds of λεκτόν, namely incomplete (only predicates), and complete (a number of different speech acts, as we would say, e.g. commands and questions). The λεκτόν making up the content of a rational impression can presumably be of any kind whatsoever. For example, it seems that one has a rational impression if one thinks the thought "Are there any white horses?" Maybe one can even be said to have a rational impression if one is thinking a predicate, e.g. 'white'. But perhaps the most important kind of rational impressions are those in which the subsisting λεκτόν is a proposition (ἀξίωμα). This sort of impression is important because propositions are the only sort of λεκτόν that has truth-values. Our sources seem to refer to such rational sense impressions with propositional content, as we would say, when they in connection with the Stoics record expressions like "This is white" and "This is sweet" (Sextus Empiricus, *Adv. Math*. VII.344; Cicero *Ac*. II.21).

A proposition is true or false independently of whether it is the content of a rational impression.[10] A true proposition is said by the Stoics to obtain (ὑπάρχειν), which it does if the predicate belongs to the subject expression, while a false proposition is said by them to merely subsist (ὑψεστάναι), which it does if the predicate does not belong to the subject expression (Sextus Empiricus, *Adv. Math*. VIII. 85; Stobaeus, I.106.18–19). In the passage just quoted, Sextus characterizes a λεκτόν as *subsisting* in accordance with a rational impression, presumably in order to accommodate the fact that some rational impressions are true, while others are false.

A passage in Ps.-Plutarch is about how one comes to form a rational sense impression on the basis of being affected by a white object (*Plac*. IV.12.1), but it is not clear from this text how the sensory affection is related to the propositional content, and, to my knowledge, there is no further evidence for a Stoic view on this. It is not unlikely, to my mind, that the Stoics did not have a well-developed general view on this notoriously difficult issue. There is, however, a related and more specific problem, which we know the Stoics were concerned with, namely that of allowing for the fact that the sensory affection is complex while at the same time maintaining that the impression has a definite propositional content.[11] This problem seems to be at issue in a disagreement between Chrysippus, the third school-arch of the Stoa, and his Stoic predecessors over the question of what exactly an impression is (Sextus Empiricus, *Adv. Math.* VII.228–231).

According to Sextus, the founder of the Stoa, Zeno, had characterized an impression as an imprint (τύπωσις), and his successor, Cleanthes, interpreted this

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[10] Here I follow Schubert, *op. cit*. See also M. Frede, "The Stoic Notion of a *lekton*" in S. Everson (ed.), *Companion to Ancient Thought 3*: *Language* (Cambridge: Cambridge University Press, 1997), 112. For a different view, see, e.g., Long, "Language and Thought in Stoicism" in idem (ed.), *Problems in Stoicism* (London: Athlone Press, 1971), 97.

[11] The Stoics need to hold that rational sense impressions have definite propositional content, for two reasons: (i) if impressions did not have definite propositional content, one would not get definite beliefs when one assented to them; (ii) in order to be able to use sense impressions to attain further knowledge, sense impressions must have definite propositional content, for otherwise an inference made on the basis of a sense impression would not be valid, on the Stoics' very strict requirements for validity.

quite literally as the sort of print that a ring makes on wax (Sextus Empiricus, *Adv. Math*. 228). But Chrysippus objected to this understanding by arguing, among other things, that, if Cleanthes is right, then

> . . . it will be necessary that, when the mind is at once appeared to by a triangle and a square, and different forms hold at the same time of the same body [i.e., the mind], this [body] becomes simultaneously both triangular and square, or even circular, which is absurd. (Sextus Empiricus, *Adv. Math*. 229; trans. by the author)

Chrysippus therefore maintained that it is better to characterize an impression more vaguely as an alteration (ἑτεροιώσις) (Sextus Empiricus, *Adv. Math*. 230). In order to bring out the merit of his own understanding of Zeno's view, Chrysippus likened the forming of an impression with a noisy room, saying that

> just as the air, when many people speak simultaneously, by receiving at once innumerable different blows, immediately also contains many alterations, so too the leading part of the soul, by being appeared to in various ways, will undergo something analogous to this. (Sextus Empiricus, *Adv. Math*. 231; trans. by the author)

Unlike what is suggested by the wax-model, Chrysippus emphasizes that one in having a sense impression typically is affected in various and complex ways, in such ways, in fact, that one may go on to say or think lots of things about what one has been affected by. But since Chrysippus also maintained that each rational sense impression has a definite propositional content (see footnote 11), the problem arises of how the richer sensory affection is related to the definite propositional content.

Chrysippus seems to have tried to accommodate this problem by means of his notion of attention (ἐπιβολή), which we have already discussed in Section 1.1 above. Cicero provides more information about the Stoics' use of this notion in a passage where he lets his Stoic spokesman, Lucullus, comment on the amazing ingenuity with which

> the first impressions strike us, and impulse then follows upon these blows, so that we then stretch the senses towards the things to be perceived. For the mind itself . . . has a natural ability, which it stretches towards that by which it is moved. (Cicero, *Ac*. II.30; trans. by the author)

What is here called 'the first impressions' (prima visa) seem to be the sensory affections, followed, as Cicero points out, by an impulse by virtue of which we 'stretch the senses' to some of the things by which we are affected. The impulse in question seems to be that of attending to something, for the Stoics defined attention as a sort of impulse (Plutarch, *Soll. An*. 961c). The overall idea conveyed in the passage just quoted thus seems to be that if one's senses get affected by, e.g., lots of different objects of various colours, one may attend to a white object in this perceptual scenario by, in physical terms, stretching the πνεῦμα of one's mind through the eyes and the intermediate air towards this object and its whiteness, i.e., in metaphorical terms, by fixing at the visible object the base of the cone-like walking-stick through which seeing takes place. Along these lines, it seems, Chrysippus tried to account for how one may form an impression with a definite propositional content, e.g. 'This is white', on the basis of being sensory affected in a complex way.

1.3 Other Sense Modi

So far I have said nothing about other sense modi than vision. But the Stoics' own examples of rational sense impressions include not only "This is white", but also, as we have seen, "This is sweet", and even, according to Cicero, "This is melodious", "This is fragrant" and "This is rough" (*Ac*. II.21). This suggests that the Stoics analyzed also the other sense modi.

Such analyses would have to accommodate for differences of at least three kinds, namely (i) differences in terms of how an impression is transmitted through a medium, (ii) differences in terms of the constitutions of the sense organs, and (iii) differences in terms of the sort of qualities that we are able to perceive by means of each sense modus. In regard to hearing, these challenges are met in the following passage:

> Hearing takes place when the air between the sonant object and the faculty of hearing is being struck in the shape of a sphere, after which it is being rippled and impinges on the ears, just as the water in a reservoir is being rippled in a circular fashion by a stone thrown into it. (Diogenes Laertius, VII.158; trans. by the author; see also Ps.-Plutarch, *Plac*. IV.19.4)

This passage follows the description of seeing quoted in Section 1.1 above and seems to be modeled on it. For just as the visible qualities we see are transmitted in air though a cone-shaped stretch of πνεῦμα, so the sounds we hear are transmitted in air through sphere-shaped waves of πνεῦμα. More accurately, the Stoics seem to hold that sounds *are* sphere-shaped pneumatic waves (Ps.-Plutarch, *Plac*. IV.19.4). In addition to this account of the nature of sound and of how it reaches our ears from the object producing it, Chrysippus' noisy room analogy (Sextus Empiricus, *Adv. Math.* VII.231; quoted in Section 1.2 above) suggest that he applied his theory of attention not only to seeing, but also to hearing. But, to my knowledge, there is no further evidence for this.

Nor is there, to my knowledge, any substantial evidence for the Stoics' views on smell, taste and touch. There is a not very informative description of vision in Ps.-Plutarch, *Placita* IV.12.1 that ends by saying that the same account holds for touch and smell. This squares with the overall impression created also by the Stoics' account on sound and hearing, namely that vision was regarded as a sort of paradigmatic sense modus in that the analysis of vision was taken to be applicable *mutatis mutandis* to the other sense modi (see also Cicero, *ND* II.142–146). But we must bear in mind that our sources for Stoic philosophy are of such a nature and quality that *ex silentio* inferences are especially hazardous.

2 Sense Perception and Cognition

In the passage we started out with, Cicero goes on to say about Zeno that he

> did not attach reliability to all impressions, but only to those which have a peculiar power of revealing their objects. Since this impression is discerned just by itself, he called it 'cognitive' . . ., but once it had been received and accepted, he called it a 'grasp' [cognition],

> resembling things grasped by the hand . . .. What was grasped by the senses, he called itself a sense-perception. (Cicero, *Ac*. I.41; trans. Long & Sedley 40B and 41B)

As we saw in the definition of sense perception quoted in Section 1.1 above, 'sense perception' is a success-term in that all cases of sense perception are cases of cognition, of "getting it right" (see also Ps.-Plutarch, *Plac*. IV.9.4). But in order for an instance a sense perception to arise, a number of conditions must be met. A visual impression (which again is the paradigmatic modus) is cognitive if and only if the object is in principle visible (e.g. not too small) and appropriately placed (e.g. not too far away), if and only if there is enough light, and if and only if one's eyes and one's mind are sound (Sextus Empiricus, *Adv. Math.* VII.424). The soundness of one's mind is, on the Stoics' view, to a large extent dependent on the soundness of one's notions: if one's notion of something is of such a kind that one may rely on it, the impression one may form by drawing on this notion will, under otherwise favourable conditions, be reliable (I shall say more about notions in Section 3 below). There are a number of cases in which one or more of the above-listed conditions are *not* met, but in each case in which they *are* met, one forms a visual impression which, because of the causal mechanism analyzed above, is reliable.

This theory can be challenged in many ways, and the epistemology of the Stoics owes much to the fact that such challenges were in fact raised against them by the contemporary skeptics in the Academy. Perhaps the toughest challenge is as follows. Even if one grants that there is such a causal mechanism that under favourable conditions transmits information from objects to our minds via our senses, it is not clear how one is able to distinguish any single thing from all other things, even a thing that looks extremely like it, e.g. a twin?

The Stoics' answer to this challenge relies on an ontological theory, namely that no objects have exactly the same set of qualities, so that even two extremely similar looking things are distinguishable in virtue of some peculiar quality each of them has.[12] A cognitive sense impression, too, is thus unlike any other impression, like horned snakes differ from other snakes (Sextus Empiricus, *Adv. Math.* VII.252). The Stoics specify two sorts of feature in virtue of which cognitive impressions differ from other impressions. In the first place, they hold that if nothing goes wrong in the transmission of a sense impression and our assent to it, we have an impression that is unique in the sense of fitting only the object from which it comes. The feature of being unique in this respect seems to be what the Stoics referred to as being 'distinct' (ἔκτυπος) (Diogenes Laertius, VII.46).

Cognitive impressions also have another feature, namely that of being clear or evident (ἐναργής and τρανής), of having clarity (ἐναργεία), the noun that Cicero renders by 'perspicuitas' and 'evidentia' (*Ac*. II.17). Epicurus is among the first who advocates the view that an impression can be regarded as reliable to the extent it is

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[12] See H. von Staden, "The Stoic Theory of Perception and its 'Platonic' Critics", in P. K. Machamer et al. (eds.), *Studies in Perception* (Columbus: Ohio State University Press, 1978), 102–103; M. Frede, "Stoics and Sceptics on Clear and Distinct Impressions", as reprinted in his *Essays in Ancient Philosophy* (Oxford: Oxford University Press, 1987), 159–162.

clear. He used the notion of clarity in two different senses. On the one hand, he held that certain *objects* are clear, namely the ones that can be perceived. It is this use of the notion of clear that later allows Sextus to speak interchangeably of 'the clear things' (τὰ ἐναργῆς) and 'the perceptible things' (τὰ αἰσθητὰ) (e.g., *Adv. Math.* VII.144; IX.393). On the other hand, Epicurus also holds that our *impressions* of these things are clear (Sextus Empiricus, *Adv. Math.* VII.203; VIII.63), meaning, it seems, that these impressions are clear because the objects of which they are impressions are clear. We may thus call Epicurus' use an "objective" sense of the term 'clear'.

Against this the Academic skeptic Carneades argued that to be clear is to be affected in a certain way (Sextus Empiricus, *Adv. Math.* VII.160). Thus Carneades distinguished between being clear in the Epicurean, objective sense, and being clear in what we may call a "subjective", "phenomenological" sense. What Carneades seems to have stressed is a point that I think many modern philosophers will subscribe to, namely a cognitive impression must be clear in the phenomenological sense, i.e., it must be experienced as very persuasive and compelling.

No Stoic before Carneades is recorded using the terms 'evident' or 'clear', but given the nature of our sources, they may, of course, well have used them. What is in any case important, however, is that when the Stoics characterized cognitive impressions as clear or evident, as we know they did after Carneades (Sextus Empiricus, *Adv. Math.* VII. 257), they used these terms in what I have called the objective sense. In other words, an instance of sense perception is, according to the Stoics, reliable if and only if it meets certain objective requirements, namely those of being formed by means of healthy sense organs, in a sane state of mind, with sufficient light, and so forth (Cicero, *Ac*. II.51–52).

3 Sense Perception and Further Knowledge

Towards the end of the passage from which I have quoted twice already, Cicero says about Zeno that he

> attached reliability to the senses . . . also because nature had given sense perception as the standard of scientific knowledge and as the natural foundation for the subsequent impression of conceptions of things upon the mind, which give rise not just to the starting-points but to certain broader routes for discovering reason. (Cicero, *Ac*. I.42; trans. Long & Sedley 41B)

Sense perception is thus a foundation for further knowledge, and this, as Cicero rightly points our, in two respects.

In the first place, sense perception is that on the basis of which we acquire notions (ἐννοίαι) of things. The Stoics' agree with Aristotle that we come to have a notion of something when we have perceived it often enough to have a memory of it and to abstract the general features from the individual cases we perceive. But unlike Aristotle, the Stoics distinguished sharply between two kinds of notions, namely the ones we come to have naturally and the ones we come to have by making efforts to acquire them (Ps.-Plutarch, *Plac*. IV.11.3). The Stoics referred to the

former kind of notions as 'preconceptions' (προλήψεις), and the latter as just 'notions' (ibid.). The term 'preconception' is by late ancient authors often substituted with the expression 'common notion' (κοινὴ ἔννοια). Preconceptions or common notions are of great importance for the Stoics, because they are guaranteed to be true since they have been acquired naturally. Among that which we come to have preconceptions of, are perceptual features of things, e.g. what a human being is like and what the quality white is like. But the Stoics argue that we also acquire preconceptions of things we have not perceived, e.g. what it is to be good and what God is like.

Sense perception is the foundation for knowledge also in another way, namely by being what Cicero calls 'starting-points', i.e., I take it, something on the basis of which we may prove things. The idea seems to be that, in a *modus ponens*, sense impressions provide the minor premises while preconceptions provide the major premises. If one, e.g., has the preconception that liquid cannot flow through solid bodies and observes that sweat is in fact flowing through the skin, one is entitled to conclude that there are invisible pores in the skin (Sextus Empiricus, *PH* II.142; *Adv. Math*. VIII.309). The role played by sense impressions in proofs is a big and difficult subject that I mention only in order to underline how much is at stake for the Stoic in establishing that sense perception is reliable.

Acknowledgments Many thanks to Cristina D'Ancona, Eyjólfur K. Emilsson, Simo Knuuttila, Cees Leijenhorst, Dominik Perler and Jack Zupko for probing questions and useful comments. Thanks also to Oslo Happiness Project for funding.

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Degrees of Abstraction in Avicenna

How to Combine Aristotle's *De Anima* and the *Enneads*

Cristina D'Ancona

Avicenna's doctrine of human knowledge has recently been the focus of so many and clever studies that this chapter would be supernumerary, were it not intended to deal with a minor issue which might serve as a complement to the proper philosophical inquiries carried on by the specialists of Avicennian thought.[1] Among the points raised in recent scholarship, the most debated is the inconsistency between what seem to be *two* accounts of how knowledge arises in us, namely, through abstraction

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[1] F. Rahman, *Avicenna's Psychology. An English Translation of Book II, Chapter VI with Historico-Philosophical Notes and Textual Improvements on the Cairo Edition* (London: Oxford University Press, 1952, repr. Westport: Hyperion, 1981 and 1984); S. Pines, "La conception de la conscience de soi chez Avicenne et chez Abū l-Barakāt al-Baġdādī", *Archives d'Histoire doctrinale et littéraire du Moyen Age* 29 (1954), 21–98 (repr. in *Studies in Abū l-Barakāt al-Baġdādī* (Leiden: Brill, 1979), 181–258); Th.-A. Druart, "Imagination and the Soul-Body Problem in Arabic Philosophy", *Analecta Husserliana* 16 (1983), 327–342; J. Michot, "L'épître sur la connaissance de l'âme rationnelle et de ses états attribuée à Avicenne", *Revue Philosophique de Louvain* 82 (1984), 479–489; idem, "L'épître sur la disparition des formes intelligibles vaines après la mort d'Avicenne", *Bulletin de Philosophie Médiévale* 29 (1987), 152–170; Th.-A. Druart, "The Soul-Body Problem: Avicenna and Descartes", in Th.-A. Druart (ed.), *Arabic Philosophy and the West. Continuity and Interaction* (Washington: Georgetown University, 1988), 27–49; M. E. Marmura, "Avicenna's Flying Man in Context", *The Monist* 69 (1986), 383–395; H. A. Davidson, *Alfarabi, Avicenna, and Averroes, on Intellect. Their Cosmologies, Theories of the Active Intellect, and Theories of the Human Intellect* (New York, Oxford: Oxford University Press, 1992), esp. 74–126; D. Black, "Estimation (*wahm*) in Avicenna: the Logical and Psychological Dimensions", *Dialogue* 32 (1993), 224–244; A. Hasnawi, "La conscience de soi chez Avicenne et Descartes", in J. Biard and R. Rashed (eds.), *Descartes et le Moyen Age* (Paris: Vrin, 1997), 283–291; D. Black, "Avicenna on the Ontological and Epistemic Status of Fictional Beings", *Documenti e studi sulla tradizione filosofica medievale*, 8 (1997), 425–453; M. Sebti, *Avicenne. L'âme humaine* (Paris: P.U.F., 2000); eadem, "La distinction entre intellect pratique et intellect théorique dans la doctrine de l'âme humaine d'Avicenne", *Philosophie* 77 (2003), 23–44; D. Black, "Imagination and Estimation: Arabic Paradigms and Western Transformations", *Topoi* 19 (2000), 59–75; D. Gutas, "Intuition and Thinking: The Evolving Structure of Avicenna's Epistemology", in R. Wisnovsky (ed.), *Aspects of Avicenna* (Princeton: Markus Wiener Publishers, 2001), 1–38; D. N. Hasse, "Avicenna on Abstraction", in R. Wisnovsky (ed.), *Aspects of Avicenna*, 39–72; M. Sebti, "Le statut ontologique de l'image dans la doctrine avicennienne de la perception", *Arabic Sciences and Philosophy* 15 (2005), 109–140.

S. Knuuttila, P. Kärkkäinen (eds.), *Theories of Perception in Medieval and Early Modern Philosophy,*

or through emanation of the intelligible Forms from above.[2] In the most recent study devoted to the theory of abstraction in Avicenna, Dag Nikolaus Hasse claims that

> What Avicenna says in many passages about the human's intellect capacity to derive universal knowledge from sense-data seems to plainly contradict passages in the same works about the emanation of knowledge from the active intellect, a separately existing substance. When he maintains that "considering the particulars [stored in imagination] disposes the soul for something abstracted to flow upon it from the active intellect", he appears to combine two incompatible concepts in one doctrine: either the intelligible forms emanate from above or they are abstracted from the data collected by the senses, but not both.[3]

My aim here is to discuss the way in which Avicenna looks for consistency, taking into account a source of his thought to which little attention has been paid: the pseudo-*Theology of Aristotle,*[4] i.e., the main remnant of the Arabic translation and

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[2] Hasse (2001) has provided a useful survey of the positions held in scholarship, as well as of many relevant texts in Avicenna's corpus.

[3] Hasse (2001), 39.

[4] After the seminal articles by P. Kraus, "Plotin chez les Arabes. Remarques sur un nouveau fragment de la paraphrase arabe des *Ennéades*", *Bulletin de l'Institut d'Egypte* 23 (1940–1941), 263–295 (repr. in P. Kraus, *Alchemie, Ketzerei, Apokryphen im frühen Islam. Gesammelte Aufsätze,* ed. R. Brague (Hildesheim, Zürich and New York: G. Olms Verlag, 1994), 313–345); L. Gardet, "En l'honneur du millénaire d'Avicenne. L'importance d'un texte nouvellement traduit", *Revue Thomiste* 59 (1951), 333–345 (repr. as "Avicenne commentateur de Plotin", in *Études de philosophie et de mystique comparées* (Paris: Vrin, 1972), 135–146), and after the French translation of Avicenna's notes by G. Vajda, "Les notes d'Avicenne sur la *Théologie d'Aristote*", *Revue Thomiste* 59 (1951), 346–406 some recent studies explore Avicenna's relationship with this foundational text of the *falsafa*: on the issue of creation, see J. Janssens, "Creation and Emanation in Avicenna", *Documenti e studi sulla tradizione filosofica medievale* 8 (1997), 455–477; on the topic of the preexistence of soul to the body see D. De Smet, "La doctrine avicennienne des deux faces de l'âme et ses racines ismaéliennes", *Studia Islamica* 93 (2001), 77–89; idem, "Avicenne et l'ismaélisme post-fatimide, selon la *Risāla al-muf ̇īda f ̇ī ῑ ̣dāḥ mulġaz al-qaṣīda* de 'Alī b. Muḥammad b. al-Walīd (ob. 1215)", in J. Janssens and D. De Smet (eds.), *Avicenna and his Heritage. Acts of the International Colloquium* (Leuven and Louvain-la-Neuve: Leuven University Press, 2002), 1–20; on the issue of God's knowledge, see my "The *Timaeus* Model for Creation and Providence. An Example of Continuity and Adaptation in Early Arabic Philosophical Literature", in Gretchen J. Reydams-Schils (ed.), *Plato's Timaeus as a Cultural Icon* (Notre Dame (Indiana): University of Notre Dame Press, 2003), 206–237; on the issue of the soul-body relationship, see P. Adamson, "Correcting Plotinus: Soul's Relationship to Body in Avicenna's Commentary on the *Theology of Aristotle*", in P. Adamson, H. Baltussen and M. W. F. Stone (eds.), *Philosophy, Science & Exegesis in Greek, Arabic & Latin Commentaries*, vol. II (London: Institute of Classical Studies, 2004), 59–75; on the issue of how intellect knows, see P. Adamson, "Non-Discursive Thought in Avicenna's Commentary on the *Theology of Aristotle*", in J. McGinnis and D. Reisman (eds.), *Interpreting Avicenna: Science and Philosophy in Medieval Islam. Proceedings of the Second Conference of the Avicenna Study Group* (Leiden, Boston and Köln: Brill, 2004), 87–111. More specifically, as for knowledge of the human soul is concerned, R. Wisnovsky, *Avicenna's Metaphysics in Context* (Ithaca, New York: Cornell University Press, 2003), 114 claims that "Avicenna's position on the soul and its relationship with the body owes much more to the Aristotle-commentator Philoponus than it does to Plotinus or Proclus." Sebti (2005), 114–115, deals with Avicenna's commentary on the *Theology* as a witness of his epistemological doctrines as follows: "Le problème est alors de savoir comment l'âme immatérielle peut connaître quelque chose du monde matériel. Ibn Sīnā va s'attacher à élaborer une doctrine de la perception sensible qui la détermine comme

adaptation of *Enneads* IV–VI, worked out at the beginnings of the *falsafa* within the circle of al-Kindī.[5] I shall try to argue that, in solving the problem of how the human soul operates in order to get true knowledge, a decisive input is provided by an utterance of "Aristotle" himself, in his own *Theology*.[6] In Avicenna's understanding of the process of attaining true knowledge from sense-perception, the *De Anima* and the *Theology* – or, to put it another way, Aristotle and Plotinus[7] – tell a consistent story and can be explained one by means of the other. This does not imply that Avicenna's position (or positions)[8] can be totally accounted for through the sources he makes use of – as do most philosophers, Avicenna combines his sources into his own perspective.[9] Still, his thoughts about such controversial issues as what is the

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un processus d'intériorisation progressive du donné sensible dans lequel la costitution d'une image joue un rôle primordial. La manière dont il pose le problème dans ses Notes à la *Pseudo-Théologie* est révélatrice de sa perspective doctrinale: 'Étant donné que l'âme a besoin d'un corps en vue de son perfectionnement, un corps a été créé pour elle afin qu'elle s'y attache. Étant donné qu'elle atteint sa perfection intellectuelle par l'intermédiaire des perceptions sensibles, elle a besoin de puissances sensibles dont les unes procurent [les perceptions] à l'extérieur et les autres ont pour fonction de conserver et d'acheminer vers l'âme [les perceptions] ainsi obtenues'."

[5] See G. Endress, "The Circle of al-Kindī. Early Arabic Translations from the Greek and the Rise of Islamic Philosophy", in G. Endress and R. Kruk (eds.), *The Ancient Tradition in Christian and Islamic Hellenism. Studies on the Transmission of Greek Philosophy and Sciences dedicated to H. J. Drossaart Lulofs on his ninetienth birthday* (Leiden: Research School CNWS, 1997), 43–76.

[6] For the features of the pseudo-*Theology* that hint towards the purposeful attribution of the text to "Aristotle" see our collective work *Plotino. La discesa dell'anima nei corpi (Enn. IV 8[6]). Plotiniana Arabica (pseudo-Teologia di Aristotele, capitoli 1 e 7; "Detti del Sapiente Greco")*, ed. C. D'Ancona (Padova: Il Poligrafo, 2003), 72–91, with reference to previous literature and different opinions.

[7] For the question of the authorship of the pseudo-*Theology* in Avicenna's eyes see *Plotino. La discesa dell'anima nei corpi (Enn. IV 8[6])*, 91–111, with reference to previous literature. Scholars disagree about whether or not Avicenna conceived of the pseudo-*Theology* as a true Aristotelian work. On the other hand, it is commonly acknowledged that he was aware of the difficulties of fitting the pseudo-*Theology* within the framework of the Aristotelian corpus (see below, n. 33). It seems to me that the very effort Avicenna made in his notes, to harmonize even the most un-Aristotelian doctrines held in the pseudo-*Theology* with the true Aristotle, tips the scale in favour of Avicenna's conviction of Aristotle's genuine authorship of this work: for some examples of Avicenna's exegetical attitude see *Plotino. La discesa dell'anima nei corpi (Enn. IV 8[6])*, 105–111.

[8] A substantive evolution in Avicenna's epistemology has been suggested by Gutas (2001) and Hasse (2001).

[9] D. Gutas, *Avicenna and the Aristotelian Tradition. Introduction to Reading Avicenna's Philosophical Works* (Leiden, New York, København and Köln: Brill, 1988), 286–296, remarks the independence increasingly shown by Avicenna with respect to the philosophical *auctoritates* of his time (essentially Aristotle), and points to the "attitude (. . .) to distance himself from membership in the company of the Aristotelian commentators" (291), an attitude connected with an increasing "awareness of his personal contribution to the history of philosophy", which made him start "coming into his own and speaking in his own voice as a philosopher" (295). Later on, the same scholar has seen in Avicenna's "aporetic and investigative" method – in sharp contrast with the slavish attitude towards the *auctoritas* of Aristotle, typical of his contemporaries – one of the reasons for the success of his philosophy: see D. Gutas, "The Heritage of Avicenna: the Golden Age of Arabic Philosophy, 1000–ca.1350", in *Avicenna and his Heritage. Acts of the International Colloquium* (Leuven and Louvain-la-Neuve: Leuven University Press, 2002), 81–97. Still, the Arab Aristotle

origin of true knowledge and what are the means to reach it, can be better understood against the background of an attitude to read Aristotle in the light of Plotinus and Plotinus in the light of Aristotle. This attitude characterises the beginnings of *falsafa* and becomes a habit with later *falāsifa*, including al-Fārābī and Avicenna himself, be it because they rely on the pseudo-*Theology* as a genuine Aristotelian work,[10] or because they inherited, from the philosophical tradition of the Neoplatonic schools of late Antiquity, the model of conflating their doctrines – the "harmony between Plato and Aristotle" exalted by the *falāsifa* would often be better labelled as the "harmony between *Plotinus* and Aristotle" – or for both reasons.

In what follows I shall outline the problem of the interplay between the two sources of true knowledge in Avicenna's eyes: sense-perception, and the intelligible Forms in the separate Intellect,[11] using as a guide his *Kitāb al-Naǧāt* (*Book of*

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worked out at the beginnings of the *falsafa* through the cross-pollination between as crucial texts as the *Metaphysics* and the *Enneads* counts as the main frame of Avicenna's thought. For an up-to-date account of Avicenna's relationship with his philosophical *auctoritates* see A. Bertolacci, "Il pensiero filosofico di Avicenna", in C. D'Ancona (ed.), *Storia della filosofia nell'Islam medievale* II (Torino: Einaudi, 2005), 522–626.

[10] The issue of Aristotle's genuine authorship of the pseudo-*Theology* in the eyes of al-Fārābī and Avicenna is much debated and I can here only sum up the main positions held in scholarship. As for al-Fārābī, P. Kraus (1940–1941), 209–210 (319–320 of the reprint) inaugurated the attitude to doubt the sincerity of the position held by al-Fārābī when the latter, in his *Book on the Harmony of the Two Sages, the Divine Plato and Aristotle*, relied on the pseudo-*Theology* as a genuine expression of Aristotle's main thoughts about God and his creation. Kraus explicitly endorsed the well-known "dissimulationist" reading of al-Fārābī's thought held by L. Strauss (according to Strauss, some Farabian works are "exoteric" and do not express the genuine ideas of their author). Kraus then suspected that when al-Fārābī quoted the pseudo-*Theology* as a case in point for showing that Aristotle shared with Plato the creationist position, he was but making an "exoteric" statement, which did not express his inner convictions. The idea that some Farabian works were only "exoteric" was endorsed by M. Mahdi in several studies, now gathered in *Alfarabi and the Foundation of Islamic Political Philosophy* (Chicago and London: The University of Chicago Press, 2001). Following in the footsteps of Strauss' and Mahdi's skepticism about the utterances of al-Fārābī in the so-called "exoteric" works, also M. Galston, "A Re-examination of al-Fārābī's Neoplatonism", *Journal of the History of Philosophy* 15 (1977), 13–32 claims that the *Book on the Harmony of the Two Sages, the Divine Plato and Aristotle* does not reflect al-Fārābī's genuine thought. Other scholars went so far in this attitude as to deny the Farabian authorship of the *Book on the Harmony*: see for instance J. Lameer, *Al-Farabi and Aristotelian Syllogistics: Greek Theory and Islamic Practice* (Leiden: Brill, 1994), 30–39. According to F. W. Zimmermann, "The Origins of the so-called *Theology of Aristotle*", in J. Kraye, W. F. Ryan and C. B. Schmitt (eds.), *Pseudo-Aristotle in the Middle Ages. The Theology and Other Texts* (London: The Warburg Institute, 1986), 110–240, esp. 181, al-Fārābī was aware of the non-Aristotelian origin of the pseudo-*Theology*. For a different position see *Plotino. La discesa dell'anima nei corpi (Enn. IV 8[6])*, 97–101, esp. 99 n. 258. As for Avicenna's evaluation of the authorship of the pseudo-*Theology*, see above, footnote 7 and below, footnote 33.

[11] Hasse (2001) rightly points out that one cannot solve the apparent inconsistency between the two accounts in Avicenna's doctrine of knowledge by playing down the role of abstraction from sense-data, conceiving of it as a mere *façon de parler*. He suggests that an evolution took place in Avicenna's epistemological positions: in the final stage, the separate Intellect plays little or no role. In describing the version of the doctrine of abstraction given in as late works as the *Dānešnāme*, *al-Išārāt wa-l-tanbīhāt* and *al-Mubāḥaṯāt*, Hasse claims that "One also notes that there is only one

Salvation),[12] an abridgement of his major philosophical encyclopaedia *Kitāb al-Šifā'* (*Book of the Cure*).[13] At least as far as the section on soul is concerned, a close relationship between the two works is beyond doubt: the *Kitāb al-Naǧāt* exhibits an account of the doctrine of the soul which is fully consistent with the one given in the section on the soul of the *Kitāb al-Šifā'*.

Chapter 6 of Book II in the *Kitāb al-Naǧāt* has the same relative position as Book VI of the section on Natural Science. The *Kitāb al-Šifā'* opens with the expanded Organon of Late Antiquity (with Porphyry's *Isagoge* at its beginning and Aristotle's *Rhetorics* and *Poetics* at its end) and its climax is represented by rational theology.[14] The natural sciences culminate in the science of soul, and if one takes into account the fact that between the natural sciences and metaphysics there are the mathematical sciences, it will become clear that the Aristotelian corpus has been significantly combined with a different approach, which is reminiscent of the place of the objects of διάνοια in the Platonic divided line.[15] However, as different as the Aristotle of Avicenna may be from the genuine one, it is often the case that Avicenna's philosophical positions faithfully reproduce Aristotle's. As for psychology, it is widely

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active power in the process, the human intellect: it turns towards the imaginable forms and acts upon them (. . .). In other words, by looking through the many data furnished by the senses, the intellect assumes a focus that allows for the discernment of a specific intelligible form. Clearly, the protagonist in abstraction remains the human intellect" (63). My difficulty with this solution is that Avicenna's description of how knowledge takes place in us, offered in the notes to the pseudo-*Theology,* is the other way around, and the notes belong in the *Kitāb al-Inṣāf*, a late work more or less coeval with the *Dānešnāme*, *al-Išārāt wa-l-tanbīhāt* and *al-Mubāḥaṯāt* (see below, footnote 32).

[12] Ibn Sīnā, *al-Naǧāt min al-ġarq fī baḥr al-ḍalālāt* (*Salvation from Sinking into the Sea of Errors*); ed. M. T. Dānešpazūh (Tehran: Dānešgah Tehran, 1985); an English translation, based on the edition Cairo 1938 and six manuscripts, has been provided by Rahman (1952). The same scholar has also provided the edition of the psychological section of the *Kitāb al-Šifā'*: *Avicenna's De Anima [Arabic Text], being the psychological part of the Kitāb al-Shifā'*, ed. F. Rahman (London, New York and Toronto: Oxford University Press, 1959).

[13] According to Rahman (1952), 1, the *Kitāb al-Naǧāt* is "an abridgment by the author himself of his large philosophical encyclopaedia called the *Kitāb al-Šifā'*. For the greater part, the *Najāt* very closely follows the text of the *Shifā'*. The abridgment is not here to be understood in the sense that the *Najāt* gives in concise language all or even most of what is contained in the *Shifā'*. What the author seems to have done for the most part is to omit long chapters of the *Shifā'* and to reproduce, very often literally, the introductory or general remarks of the *Shifā'*. This constitutes the text of the *Najāt.*" Gutas, *Avicenna and the Aristotelian Tradition*, 145, locates the *Kitāb al-Naǧāt*, together with the *Kitāb al-Šifā'*, in what he calls the "middle period" (1020–1027). He is followed by Hasse (2001), 49.

[14] See Bertolacci (2005), esp. 537–544.

[15] On the place of mathematical sciences between physics and metaphysics/theology in Late Antiquity see Ph. Merlan, *From Platonism to Neoplatonism* (The Hague: Martinus Nijhoff, 1968[3]), 11–33; K. Kremer, *Der Metaphysikbegriff in den Aristoteles-Kommentaren der Ammonius-Schule* (Münster: Aschendorff, 1961), 93–96; D. J. O'Meara, *Pythagoras Revived. Mathematics and Philosophy in Late Antiquity* (Oxford: Clarendon Press, 1989). See also, on individual issues, *La philosophie des mathématiques de l'Antiquité tardive. Actes du colloque international Fribourg, Suisse (24–26 septembre 1998)* ed. G. Bechtle and D. J. O'Meara (Fribourg: Editions Universitaires, 2000).

acknowledged that Avicenna's doctrine of soul as presented in the *Kitāb al-Šifā'* and in the *Kitāb al-Naǧāt* relies on Aristotle's *De Anima*. However, as we have just seen in the remarks by D. N. Hasse, Avicenna's understanding of human knowledge is quite different from that of Aristotle. This too has been acknowledged in scholarship and my aim here is not to repeat once more that Neoplatonic psychology has to also be taken into account in order to explain Avicenna's doctrine of soul. Rather, I would like to explore the way in which Avicenna manages to combine both the Aristotelian and the Neoplatonic models into a unique and consistent description, following a suggestion given by "Aristotle" himself in his *Theology.*

1 Sense-Perception and Intellectual Knowledge

In his account of human knowledge Avicenna starts, in a purely Aristotelian vein, by distinguishing between vegetative and animal souls. The animal soul possesses the motive and perceptive faculties (or parts); in turn, the perceptive faculty (or part) of the soul can be subdivided into two sets of faculties or two parts: the external senses and the internal senses. It is through the external senses that all those provided with an animal soul get their knowledge of the world:

> The forms of all the sensibles reach the organs of sense and are imprinted on them, and then the faculty of sensation perceives them. (*Kitāb al-Naǧāt*, ed. Dānešpazūh, 323.8–323.9, transl. Rahman, 27)

After having discussed sight, the internal senses are examined:

> There are some faculties of internal perception which perceive the form of the sensed things, and others which perceive the "intention" (*ma'nā*) thereof. (. . .) The distinction between the perception of the form (*idrāk al-ṣūra*) and that of the intention (*idrāk al-ma'nā*) is that the form is what is perceived both by the inner soul and the external sense; but the external sense perceives it first and then transmits it to the soul (. . .). Now what is first perceived by the sense and then by the internal faculties is the form, while what only the internal faculties perceive without the external sense is the intention. (. . .) These, then, are the faculties of the animal soul. (*Kitāb al-Naǧāt*, ed. Dānešpazūh, 327.5–328.1 and 330.1, transl. Rahman, 30–31)

It has often been said that this is one of the most original developments of Aristotle's doctrine of perception, and following H. A. Wolfson, who wrote a basic study on this topic in 1935,[16] it is widely acknowledged that this doctrine traces back to Alexander of Aphrodisias, not without the decisive cooperation of the Neoplatonic exegesis of the *De Anima*, chiefly the one by John Philoponus. Philoponus' exegesis conveyed the Plotinian views about soul and its knowledge within the framework of a commentary on Aristotle's *De Anima*, and all this paved the way to Avicenna's

[16] H. A. Wolfson, "The Internal Senses in Arabic, Hebrew and Latin Philosophical Texts", *Harvard Theological Review* 27 (1935), 69–133 (repr. in idem, *Studies in the History of Philosophy and Religion* I (Cambridge, MA: Harvard University Press, 1973), 250–314).

theory of the internal senses which, to put it in Rahman's words, "bridged the gap" between perception and intellection.[17]

Little or nothing has to be added to the history of the notion of common sense from Aristotle to Avicenna: the ancestors of the Avicennian doctrine of the internal senses lie both in the Peripatetic and the Neoplatonic traditions of thought, and both have been explored in depth. In *De Anima* III.1, Aristotle ruled out the possibility of the existence of other senses in addition to the five which perceive the extramental objects (424b22–24) and assigned to an αἴσθησις κοινή the task of perceiving the κοινὰ αἰσθητά like "magnitude" or "movement" (425a14–30). Alexander of Aphrodisias adopted the expression κοινὴ αἴσθησις in his account of the phenomena that take place both when several senses perceive the same object and when the κοινὰ αἰσθητά are perceived. He also made use of a simile: the κοινὴ αἴσθησις is like the centre of a circle,[18] unifying in itself what comes from different sources. In IV.7[2].6, 3–19 Plotinus made use not only of the Aristotelian and Peripatetic topic of the κοινὴ αἴσθησις, but also of the simile of the centre and the circle in order to show that were the soul material, perception would be impossible.[19] After Plotinus, other Platonists – who, at variance with Plotinus and following in the footsteps of Porphyry, devoted themselves to writing commentaries on Aristotle – worked out the topic of the soul's capacity to gather sense-data in an inner faculty which, albeit operating on perceptions, is of a higher degree than the five external senses.[20] Avicenna inherited from this tradition, as is widely acknowledged

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[17] Rahman (1952), 19, states that for Avicenna "Intellect is the recipient of universal forms, just as sensation is the recipient of individual forms present in matter. The gap between the absolutely material forms of sensibles and the absolutely abstract forms of intelligibles is bridged, according to Avicenna, by imagination in the strict sense (i.e. the faculty in which images are formed) and estimation. Sensation has to deal with forms immersed in matter: the presence of matter is necessary if sensation has to be possible. Imagination does not need the presence of the physical object, and its objects are therefore not material, although they are after the pattern of material objects. The next stage of abstraction is reached in estimation which perceives the ideas of pleasure and pain, of good and bad, in the individual objects of sensation and imagination. However crude this theory may be, it is an attempt to explain the difference between the act of knowledge on the part of sensation and that on the part of intellect."

[18] Alexander of Aphrodisias, *De Anima*, 63.6–13 ed. Bruns: "ἢ δυνήσεται οὕτως ἡ κοινὴ αἴσθησις ἅμα τὰς διαφορὰς γνωρίζειν τῶν διαφόρων αἰσθητῶν, εἰ πῇ μὲν ἓν εἴη τὸ αἰσθητικόν, πῇ δὲ πλείω τε καὶ διαιρούμενον. ὡς γὰρ ἐπὶ κύκλου αἱ ἀπὸ τῆς περιφερείας αὐτοῦ ἐπὶ τὸ κέντρον ἐπιζευγνύμεναι οὖσαι πολλαὶ πᾶσαι κατὰ τὸ πέρας εἰσὶν αἱ αὐταὶ τῷ τά τε πέρατα αὐτῶν ἐφαρμόζειν τῷ τοῦ κύκλου κέντρῳ καὶ ἔστι τὸ πέρας τοῦτο ἕν τε καὶ πολλά, καθόσον μὲν πολλῶν ἐστι καὶ διαφερόντων πέρας, πολλά, καθόσον δὲ πάντα ἀλλήλοις ἐφήρμοσεν, ἕν, οὕτως ἔχειν ὑποληπτέον καὶ τὴν κοινὴν αἴσθησιν τὸ ἕν τε καὶ πολλά."

[19] P. Henry, "Une comparaison chez Aristote, Alexandre et Plotin" in *Les Sources de Plotin*. Entretiens de la Fondation Hardt, V (Vandœuvres – Genève: Fondation Hardt, 1960), 429–444. See also H. J. Blumenthal, "Plotinus' Adaptation of Aristotle's Psychology: Sensation, Imagination and Memory", in R. Baine Harris (ed.), *The Significance of Neoplatonism* (Norfolk VA: International Society for Neoplatonic Studies, 1976), 41–58 (repr. in idem, *Soul and Intellect. Studies in Plotinus and Later Neoplatonism* (Aldershot: Variorum, 1993), same pagination).

[20] On the history of the topic see H. J. Blumenthal, "Neoplatonic Elements in the *De Anima* Commentaries", *Phronesis* 21 (1976), 64–87 (repr. in R. Sorabji (ed.), *Aristotle Transformed.*

The Ancient Commentators and Their Influence (London: Duckworth, 1990), 305–324); I. Hadot, "Aspects de le théorie de la perception chez les néoplatoniciens: sensation (αἴσθησις), sensation commune (κοινὴ αἴσθησις), sensibles communs (κοινὰ αἰσθητά) et conscience de soi (συναίσθησις)", *Documenti e studi sulla tradizione filosofica medievale* 8 (1997), 33–85. Concerning the commentary on the *De Anima* ascribed to Simplicius by the mss, and published under his name in the Commentaria in Aristotelem Graeca XI, ed. M. Hayduck (Berlin, 1882), a question of authenticity has been raised. C. Steel and F. Bossier, "Priscianus Lydus en de *In De Anima* van pseudo (?) Simplicius", *Tijdschrift voor Filosofie* 34 (1972), 761–782, questioned Simplicius' authorship and proposed to assign the commentary to Simplicius' contemporary Neoplatonic philosopher Priscianus Lydus. Their arguments were partly accepted by I. Hadot, *Le problème du néoplatonisme alexandrin. Hiéroclès et Simplicius* (Paris: Études Augustiniennes, 1978), 193–202 (see esp. the conclusion, p. 202), but later on the same scholar was more and more convinced of Simplicius' authorship: see, finally, I. Hadot, "Simplicius or Priscianus? On the Author of the Commentary on Aristotle's *De Anima* (*CAG* IX): A Methodological Study", *Mnemosyne* 55 (2002), 159–199. Against Simplicius' authorship are C. Steel, *The Changing Self. A Study on the Soul in Later Neoplatonism: Iamblichus, Damascius and Priscianus*, Verhandelingen van de Koninklijke Academie voor Wetenschappen, Letteren en Schone Kunsten van België, (Brussels: Koninklijke Academie voor Wetenschappen, Letteren en Schone Kunsten, 1978); H. J. Blumenthal, "The Psychology of (?) Simplicius' Commentary on the *De Anima*", in H. J. Blumenthal and A. C. Lloyd (eds.), *Soul and the Structure of Being in Late Neoplatonism* (Liverpool: Liverpool University Press, 1982), 73–93; idem, "Simplicius (?) on the First Book of Aristotle's *De Anima*", in I. Hadot (ed.), *Simplicius. Sa vie, son œuvre, sa survie* (Berlin and New York: de Gruyter, 1987), 91–112 (repr. in *Soul and Intellect. Studies in Plotinus and Later Neoplatonism* (Aldershot: Variorum, 1993), same pagination); J. O. Urmson, "Introduction", Simplicius, *On Aristotle On the Soul 1.1–2.4*, translated by J.O. Urmson, notes by P. Lautner (London: Duckworth, 1995), esp. 2–4. The commentary by John Philoponus too involves a question of authorship, as for the commentary on *De Anima* III. The commentary is published in the Commentaria in Aristotelem Graeca XV, ed. M. Hayduck (Berlin, 1897), and the editor indicated Stephanus of Alexandria as the author of book III; the 13th Century Latin translation by William of Moerbeke of chapters 4–8 of Book III, the so-called *De Intellectu*, exhibits in fact a text which is different from the one edited in the Commentaria in Aristotelem Graeca (see *Jean Philopon. Commentaire sur le De Anima d'Aristote. Traduction de Guillaume de Moerbeke* (Paris: Publications Universitaires de Louvain and Béatrice–Nauwelaerts, 1966), and S. van Riet, "Fragments de l'original grec du *De Intellectu* de Philopon dans une compilation de Sophonias", *Revue Philosophique de Louvain* 63 (1965), 5–40; see also W. Charlton, *Philoponus. On Aristotle On the Intellect* (London: Duckworth, 1991). On Stephanus' authorship of the commentary on book III see H. J. Blumenthal, "John Philoponus and Stephanus of Alexandria: Two Neoplatonic Christian Commentators of Aristotle?" in D. J. O'Meara (ed.), *Neoplatonism and Christian Thought*, (Norfolk VA: International Society for Neoplatonic Studies, 1982), 54–63 and 244–46 (repr. in *Soul and Intellect. Studies in Plotinus and Later Neoplatonism* (Aldershot: Variorum, 1993), same pagination). P. Lautner, "Philoponus, in *De Anima* III: Quest for an author", *Classical Quarterly* 42 (1992), 510–522 and "Philoponean Accounts on Phantasia", *Acta Antiqua Academiae Scientiarum Hungaricae* 34 (1993), 159–170, thinks of a pupil of Philoponus and is skeptical about the authorship of Stephanus of Alexandria; W. Bernard, "Philoponus on Self-Awareness", in R. Sorabji (ed.), *Philoponus and the Rejection of Aristotelian Science* (London: Duckworth, 1987), 154–163, thinks of Philoponus himself as the author. On the doctrinal aspects of the commentary see H. J. Blumenthal, "Body and Soul in Philoponus", *The Monist* 69 (1986), 370–382; idem, "*Nous pathetikos* in Later Greek Philosophy", in H. Blumenthal and H. Robinson (eds.), *Aristotle and the Later Tradition*, Supplementary volume of the *Oxford Studies in Ancient Philosophy* (Oxford: Clarendon Press, 1991), 191–205; idem, "Were Aristotle's Intentions in Writing the *De Anima* Forgotten in Late Antiquity?", *Documenti e studi sulla tradizione filosofica medievale* 8 (1997), 143–157; A. Sheppard, "Phantasia and Mental Images: Neoplatonist Interpretations of *De Anima*, 3.3" in H. Blumenthal and H. Robinson

in scholarship.[21] However, he did not simply endorse a well established tradition of cross-pollination between the Aristotelian and Neoplatonic doctrines of knowledge: he worked out his own doctrine of how the soul acquires true knowledge both from sense-data and the intelligible forms. I shall try to argue that in doing so he was directly influenced by the Arabic version of Plotinus; but before this I would like to focus on the philosophical problems he had to tackle in his attempt at bridging the gap between sense-perception and intellectual knowledge.

We have just seen that sense-perception and imagination are faculties that the human soul shares with every other animal soul. Immediately after, Avicenna goes on to describe the rational soul and endorses the Aristotelian distinction between theoretical and practical activities, adopting for the theoretical activities the term *ʿaql*, i.e., the common Arabic rendering for νοῦς. Surprisingly enough, the theoretical faculty is said to passively receive the intelligibles from above. The picture here is of the human soul as having two faces:[22] one turned towards the management of body and another, the theoretical one, "turned towards the higher principles" and receiving them from a higher region of being:

> The human rational soul is also divisible into a practical and a theoretical faculty, both of which are equivocally called intelligence. (. . .) the human soul, as will be shown later, is a single substance (*ǧawhar wāḥid*) which is related (*wa-lahū nisba wa-qiyās*) to two planes – the one higher and the other lower than itself. It has special faculties which establish the relationship between itself and each plane: the practical faculty which the human soul possesses in relation to the lower plane, which is the body, and its control and management; and the theoretical faculty in relation to the higher plane, from which it passively receives and acquires intelligibles. It is as if our soul has two faces: one turned towards the body, and it must not be influenced by any requirements of the bodily nature; and the other turned towards the higher principles, and it must be ready to receive from what is there in the higher plane and to be influenced by it. (*Kitāb al-Naǧāt*, ed. Dānešpazūh, 330.7–330.9 and 332.2–332.13; trans. Rahman, 32–33)

However, Avicenna sees no contradiction at all between this pattern – which is clearly Platonic and Neoplatonic – and the Aristotelian doctrine of abstraction of the intelligibles out of the sense-data. Immediately after the passage quoted above, he claims that what the theoretical faculty "receives" is precisely a universal *abstracted* form, *al-ṣūra al-kulliyya al-muǧarrada*:

> The function of the theoretical faculty is to receive the impressions of the universal forms abstracted from matter (*al-ṣuwar al-kulliyya al-muǧarrada ʿan al-mādda*). If these forms are already abstracted in themselves (*muǧarrada bi-ḏātihī*), it simply receives them; if not,

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(eds.), *Aristotle and the Later Tradition*, Supplementary volume of the *Oxford Studies in Ancient Philosophy* (Oxford: Clarendon Press, 1991), 165–173; U. M. Lang, *John Philoponus and the Controversies Over Chalcedon in the Sixth Century. A Study and Translation of the Arbiter* (Leuven: Peeters, 2001), esp. 135–157.

[21] In his commentary Rahman (1952), 70–120 deals extensively with the Greek sources of Avicenna's doctrine; see also D. Gutas, "Philoponos and Avicenna on the Separability of the Intellect. A Case of Orthodox Christian–Muslim Agreement", in *Greek Orthodox Theological Review* 31 (1986), 121–129.

[22] Cf. De Smet (2001).

> it makes them immaterial by abstraction (*bi-taǧrīdihā*), so that no trace whatever of material attachments (*ʿalā'iq al-mādda*) remains in them. (*Kitāb al-Naǧāt*, ed. Dānešpazūh, 333.2–333.5; trans. Rahman, 33)

Avicenna's attempt at avoiding inconsistency pivots on the distinction between two senses in which forms are "abstracted": there are forms which are abstracted (*muǧarrada*) already in themselves (and one may say that they are the intelligibles which the soul receives "from above"), whereas others are not really: the forms which still contain some "material attachments" (*ʿalā'iq al-mādda*) need to be divested from them in order to be known. The theoretical faculty performs the task of disentangling them from matter, and there is an entire chapter, the VIIth, devoted to explaining how this happens.

> It is probable that all perception is but the abstraction (*aḫḏ*) by the percipient subject of the form of the perceived object in some manner. If, then, it is a perception of some material object, it consists in somehow abstracting its form from its matter. But the kinds of abstraction are different and its grades various. (...) So sometimes the abstraction of the form is effected with all or some of these attachments (*ʿalā'iq*), and sometimes it is complete in that the form is abstracted not only from matter but also from the accidents it possesses. (...) sensation cannot disentangle form from matter completely divorced from material accidents (*ʿan al-mādda maʿa ǧamīʿ lawāḥiqihā*), nor can it retain the form after the absence of matter. Thus it seems that it cannot effect a complete detachment of the form from matter, but needs the presence of matter if the form has to remain present to it. But the faculty of representation (*al-ḫayāl*) purifies the abstracted form to a higher degree, since it takes it from matter in such a way that it does not need the presence of matter for the presence of form. (...) The faculty of estimation (*al-wahm*) goes a little farther than this in abstraction, for it receives the intentions which in themselves are non-material, although they happen to be in matter. (...) This abstraction is relatively more perfect and nearer the absolute than in the previous two forms of the process. (...) But the faculty in which the fixed forms are either the forms of existents which are not at all material and do not occur in matter by accident, or the forms of material existents though purified in all respects from material attachments (*ʿalā'iq al-mādda*) – such a faculty obviously perceives the forms by taking them as completely abstracted from matter (*aḫḏan muǧarradan ʿan al-mādda*) in all respects. This is evident in the case of existents which are in themselves free from matter. As to those existents which are present in matter, either because their existence is material or because they are by accident material, this faculty completely abstracts them both from matter and from their material attachments in every respect and perceives them in pure abstraction (*aḫḏan muǧarradan*). (...) In this way the knowledge of the various judging faculties – sensation, representation, estimation, and intellect – is distinguished. (*Kitāb al-Naǧāt*, ed. Dānešpazūh, 344.3–344.9; 345.11–346.6; 347.5–347.7; 348.1–349.7; transl. Rahman, 38–40)

This passage enumerates the degrees of abstraction. We are told here that every perception is abstraction — a statement clearly reminiscent of Aristotle's remark that it is not the stone that is in the soul but the εἶδος of the stone.[23] The degrees of the process, which lead to completely divesting form from the material attachments, in this passage, are four, just as they are in the corresponding section of the *Kitāb al-Šifāʾ*, II.2. Here too Avicenna lists sense-perception (*ḥiss*), which cannot disentangle form from matter; representation, or imagination (*taḫayyul* or *ḫayal*),

[23] See below, footnote 29.

which purifies the perceived form from its material attachments to a degree higher than sense-perception; estimation (*wahm*), which grasps the *ma'nā* (*intentio*) of the thing, i.e., the mental object; and finally intellect (*'aql*), the only faculty in which the forms are totally freed from matter, either because they are so by themselves, or because matter is stripped of them.[24]

Now we are in possession of almost all the data of the problem. Avicenna relies on Aristotle for his description of sense-perception, but he also takes for granted that there are forms which are in themselves immaterial and can be grasped by the theoretical faculty of the soul, *'aql*, νοῦς. The full account of this doctrine is given in the section of the *Kitāb al-Naǧāt* located between the two passages quoted above – the one in which we are told that the task of the soul's theoretical faculty is to receive the forms abstracted from matter,[25] and the one in which the degrees of abstraction are listed.[26] In between, Avicenna enumerates the meanings of *'aql*, following in al-Fārābī's footsteps,[27] and claims that the human faculty of the intellect turns into actual intellection thanks to a "sort of contact" with a principle eternally and actually intellecting:

> (. . .) the potential intelligence (*al-'aql bi-l-quwwa*) becomes actual only through an intelligence which is always actual (*bi-sabab 'aql huwa dā'iman bi-l-fi'l*), and that, when the potential intelligence makes some sort of contact with it (*naw' min al-ittiṣāl*), certain forms

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[24] *Avicenna's De Anima [Arabic Text], being the psychological part of the Kitāb al-Shifā'*, ed. Rahman, 58.3–61.17; cf. *Avicenna Latinus. Liber de Anima seu sextus de naturalibus*, vol. I–III, édition critique de la traduction latine médiévale par S. van Riet, introduction sur la doctrine psychologique d'Avicenne par G. Verbeke (Louvain and Leiden: Peeters and Brill, 1972), 114.50–120.41. In a previous chapter, I.5 (44.3–48.4 Rahman, 87.19–95.19 van Riet), the picture is more complicated: here we first have phantasy (called *quwwa banṭāsīyā* and explained as "common sense, *al-ḥiss al-muštarik*", Rahman 44.3–4 = *fantasia quae est sensus communis* 87.20 van Riet); then comes imagination (*al-ḫayāl*), which is said to be a power of imagination (*mutaḫayyala*, 45.3 Rahman = *imaginativa*, 89.44 Van Riet) as related to the soul as a living principle, and a power of thinking (*mufakkira*, 45.3 Rahman = *cogitans*, van Riet 89.45) as related to the human soul. Then comes memory (*al-quwwa al-ḥāfiẓa al-ḏākira*, Rahman 45.11 = *vis memorialis et reminiscibilis*, 89.53–89.54 van Riet), and finally intellect, a faculty which is equivocally said to be both for the power of knowing and for the power of operating (Rahman 45.17–45.18 = 90.61–90.63 van Riet: "Sed animae rationalis humanae vires dividuntur in virtutem sciendi et virtutem agendi, et unaquaeque istarum virium vocatur intellectus aequivoce aut propter similitudinem"). When intellect means the cognitive power (*al-quwwa al-naẓariyya*, Rahman 48.1 = *virtus contemplativa*, van Riet 94.15), its peculiar feature consists in being informed by the pure forms, free from matter: Rahman 48.1–48.4 = van Riet 94.15–95.19: "Sed virtus contemplativa est virtus quae solet informari a forma universali nuda a materia. Si autem fuerit nuda in se, apprehendere suam formam in se facilius erit; si autem non fuerit nuda, fiet tamen nuda quia ipsa denudabit eam, ita ut de omnibus affectionibus eius cum materia nihil remaneat in ea."

[25] See p. 55–56.

[26] See p. 56.

[27] On the doctrine and sources of al-Fārābī's doctrine of the "degrees" of intellection see M. Geoffroy, "La tradition arabe du *Περὶ νοῦ* d'Alexandre d'Aphrodise et les origines de la théorie farabienne des quatre degrés de l'intellect", in C. D'Ancona and G. Serra (eds.), *Aristotele e Alessandro di Afrodisia nella tradizione araba* (Padova: Il Poligrafo, 2002), 191–231; C. Martini Bonadeo "Al-Fārābī. La psicologia, la gnoseologia e la filosofia della mente", in C. D'Ancona (ed.), *Storia della filosofia nell'Islam medievale* I (Torino: Einaudi, 2005), 409–420.

> are actually imprinted on the former from the latter. Some forms are therefore acquired (*mustafāda*) from without.
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> (*Kitāb al-Naǧāt*, ed. Dānešpazūh, 336.1–336.5; transl. Rahman, 35)

All this gives rise to a doctrine of knowledge which may be represented as a double arrow, one coming from sense perception and the other coming from above, i.e. from the intelligible forms as they are in themselves, with the two arrows having their meeting point in abstraction. Abstraction is a process of disentangling forms from matter, and it culminates in the intellect, which "completely abstracts them both from matter and from their material attachments in every respect and perceives them in pure abstraction."[28] In the meeting point, human knowledge grasps the forms as they are in themselves, at the end of a process of "purifying" the forms: first they are grasped by sense-perception in association with matter, then imagined still in association with matter, then again judged or, if you want, named, and finally theoretically known. As we have just read, this happens two ways: either because the soul frees from matter the forms which are embedded in it, or because the soul takes "from without" – seeing them in the Intellect – those forms which are already in themselves free from matter.

2 The Background of Avicenna's Theory of Abstraction

One may be tempted to say that all this is highly eclectic, because the notion of "abstraction" seems to be intimately connected with the Aristotelian assumption that there are no separate forms. If so, Avicenna is combining two contradictory theories of knowledge. Aristotle's ἀφαίρεσις is strongly committed to the ontological assumption that forms are either concepts in the soul, τά (...) ἐν ἀφαιρέσει λεγόμενα, or τῶν αἰσθητῶν ἕξεις καὶ πάθη, states of affairs or affections of the individual substances grasped by sense-perception.[29] It is not the case that they can subsist as separate entities from individual substances, unless as concepts in the soul.

This ontological commitment is explicit in the well-known passage of *De Anima* III.8, where Aristotle states that the soul in a sense *is* everything: in fact, beings fall only into two sets, αἰσθητά and νοητά; science coincides with its objects, and sense-perception coincides with its own; but this identification of each knowing faculty with its own objects implies the soul's capacity to transform the sensible objects into things similar to itself. In order to allow the soul to perceive a stone, we have to admit that it is not the stone itself which is in the soul, but its εἶδος. Like the hand, which is ὄργανον (...) ὀργάνων, intellect is εἶδος εἰδῶν

[28] See the quotation on the previous page.

[29] This statement has been interpreted either as paving the way to a representationalist theory of perception, or as perfectly compatible with direct realism: I have greatly benefited from the analysis by M. Esfeld, "Aristotle's Direct Realism in *De Anima*", *The Review of Metaphysics* 54 (2000), 321–336, and am grateful to Riccardo Chiaradonna for directing my attention to this paper.

and sense-perception is εἶδος αἰσθητῶν. This epistemological account relies on the ontological assumption that there is no πρᾶγμα outside physical objects: ἐπεὶ δὲ οὐδὲ πρᾶγμα οὐθὲν ἔστι παρὰ τὰ μεγέθη, ὡς δοκεῖ, τὰ αἰσθητὰ κεχωρισμένον. On the other hand, the νοητά are of two sorts, τά τε ἐν ἀφαιρέσει λεγόμενα and ὅσα τῶν αἰσθητῶν ἕξεις καὶ πάθη, and both are ἐν τοῖς εἴδεσι τοῖς αἰσθητοῖς; for this reason, says Aristotle, there is no theoretical activity without sense-perception: theoretical activity always implies grasping a φάντασμα, and a φάντασμα is a perception, except that it has no matter.[30]

How on earth is it possible to combine this account of human knowledge with the opposite, namely that, taken in themselves, forms lie in the intelligible world totally free from matter, and that the human intellect knows them at best when it gets "some sort of contact" with that Intellect, which is always actually in possession of them? The last passage quoted from the *Kitāb al-Naǧāt* makes precisely this claim, but all the texts previously cited from the same work tell another story, the Aristotelian one. One may be really tempted to charge Avicenna with being inconsistent or eclectic. However, inconsistency or eclecticism is a sort of *extrema ratio* and the historian of philosophy cannot yield to this admission while there is another explanation available. As we have already seen, some scholars search for such an explanation, by suggesting that "abstraction" for Avicenna was not a doctrine in the proper sense, but a sort of inaccurate account of the process of receiving the forms from above. Other scholars look for an explanation in the suggestion that Avicenna would have evolved towards a consistent doctrine of abstraction, leaving increasingly aside any proper role of the separate forms in the generation of human knowledge.[31] What makes me unhappy with the first explanation is that Avicenna seems to take seriously the role of abstraction, not only in the *Kitāb al-Šifā'* and in the *Kitāb al-Naǧāt*, but up to the end of his career, as is shown by the list of passages D. N. Hasse has called attention to. On the other hand, the evolutionist explanation goes against the fact that in the notes to the pseudo-*Theology*, quite a late writing,[32] the forms lying in the intelligible world play the same role as in the *Kitāb al-Šifā'*and the *Kitāb al-Naǧāt*, as we shall see. But this is not the major handicap of the evolutionist explanation. It seems to me that, should Avicenna have abandoned the idea of the interplay between abstraction from sense-data and reception of the separate forms, we would be left with no solution but to play down the reliability of the *Kitāb al-Šifā'* and the *Kitāb al-Naǧāt* in our understanding of Avicenna's doctrine of the soul – an unpalatable conclusion indeed.

Being aware that the historical explanation, the *Quellenforschung*, does not solve in itself the philosophical problem, I would like to contribute to the dossier a little documentary piece that might help the proper philosophical evaluation of Avicenna's doctrine. The latter would benefit, so it seems to me, from a discussion of

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[30] *De Anima*, III.8, 431b24–432a10.

[31] See above, footnote 11.

[32] Gutas (1988), 136, claims that "the *Fair Judgment* was drafted approximately between 19 December 1028 and 7 June 1029, and this first draft was destroyed by Ma'sūd's soldiers who pillaged Avicenna's saddlebags in January 1030."

what precisely "abstraction" means for Avicenna. Should he have had as his source for the doctrine of abstraction only the passage of *De Anima* mentioned above, his idea of letting the soul receive the true intelligible forms from above when, and only when, it has been through all the ascending stages of abstraction, would be a case in point for the charge of eclecticism. But it is not the case that his only source for the doctrine of abstraction is Aristotle's *De Anima*. He also had, in his canon of authoritative works of Greek philosophy, a text – the pseudo-*Theology of Aristotle* – in which "abstraction" means something very different: a text which is, in Avicenna's eyes, either an authoritative piece of the Peripatetic tradition (as most scholars think), or even a text by Aristotle himself (my favourite explanation).[33] In the opening chapter of the pseudo-*Theology*, Avicenna saw either the unknown but reliable author of the "*Theology*", or even "Aristotle" himself, describing what happens when the soul returns to itself and, doffing its body, becomes "as if it were a naked substance" – a *ǧawhar muǧarrad* –, discovering its affinity with the intelligible forms and sharing for a moment the life of the divine Intellect itself.

In the first chapter of the pseudo-*Theology* we can read the beginning of the Plotinian treatise *On the Descent of Soul into the Bodies* IV.8[6], labelled as the "discourse of the Author (*kalām lahū*)." The label has the scope to let the reader know why there is a speech in the first person, after a long passage[34] written in the third person: IV.8[6] is in fact one of the few places in the *Enneads* where Plotinus uses the first person "I", and where the famous opening words of this treatise, πολλάκις ἐγειρόμενος εἰς ἐμαυτὸν ἐκ τοῦ σώματος (...) are faithfully rendered by a first person "I", also in the Arabic. Who is the speaker, is a question that allows for two different responses. In truth, the speaker is Plotinus. For a reader unaware of the fact that the pseudo-*Theology of Aristotle* is the Arabic translation and adaptation of *Enneads* IV–VI – a fact made evident as a result of Valentin Rose's 1883

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[33] First P. Kraus (1940–41), 272–273 (322–323 of the reprint), took into account the so-called *Lettera to Kiyā'*, where Avicenna mentions the *Kitāb al-Inṣāf* and the Notes to the "*Theology*": "Dans une lettre inédite, conservée en tête du *K. al-mubāḥaṯāt*, Ibn Sīnā se réfère à son *Kitāb al-Inṣāf*, ouvrage volumineux dans lequel il aurait discuté les problèmes de sa propre philosophie (...) et à cette occasion il note qu'il a commenté les passages difficiles du *Livre de la Théologie* 'nonobstant les critiques qui ont été formulées à l'égard de l'authenticité de cet ouvrage' *('alā fī mā Uṯūlūǧiyā min al-mat 'an)* ". This sentence has been translated in different ways. Gutas (1988), 63–64: "despite the fact that the *Theologia* is somewhat suspect"; Zimmermann (1986), 184: "for all one may find to object to in the *Uthūlūjiyā*" (according to Zimmermann, Avicenna was "far from rejecting the ascription (...) to Aristotle"); G. Strohmaier, "Avicenne et le phénomène des écrits pseudépigraphiques", in J. Janssens and D. De Smet (eds.), *Avicenna and his Heritage. Acts of the International Colloquium* (Leuven and Louvain-la-Neuve: Leuven University Press, 2002), 37–46, esp. 44, endorses Kraus' translation. According to De Smet (2002), 19 "Avicenne développe sa doctrine en polémisant sévèrement contre certains philosophes qui auraient interprété la *Theologia* de manière à trouver dans la descente de l'âme vers la matière la preuve de sa préexistence, alors qu'en réalité, selon lui, l'âme et le corps apparaissent simultanément. En outre, ces étourdis auraient lié le parcours (*sulūk*) descendant et ascendant de l'âme aux notions de l'oubli (*nisyān*) et de la réminiscence (*ḏikr*), et de surcroît professé la métempsycose."

[34] Chapter I begins with the Arabic rendering of chapters 13–15 of the treatise *On the Immortality of the Soul*, IV.7[2].

comparison between the *Enneads* and the pseudo-*Theology* freshly translated into German[35] – the speaker is the author of the "*Theology*": Aristotle, if he relies on the title of the work,[36] or a follower of Aristotle, if he has doubts on authorship. In any case, the author is someone who intrinsically belongs in the philosophical tradition crowned by Aristotle and unified around the doctrine systematically and demonstratively taught by him – the First Teacher. It is fair to assume that when Avicenna read, in his youth,[37] the *ipsissima verba* of the author of the pseudo-*Theology*, he firmly believed to be reading something that would fit with the epistemological and metaphysical doctrines of the rest of the Aristotelian corpus. Here is what he read:

> Often I have been alone with my soul and have doffed my body and laid it aside and become as if I were naked substance (*ǧawhar muǧarrad*) without body, so as to be inside myself, outside all other things and in this way I am knowledge, the knower and the known at one and the same time. Then do I see within myself such beauty and splendour as I do remain marvelling and astonished, so that I know that I am one of the parts of the sublime, surpassing, lofty, divine world, and possess active life. When I am certain of that, I lift my intellect up from that world into the Divine Cause and become as if I were placed in it and cleaving to it, so as to be above the entire intelligible world, and seem to be standing in that sublime and divine place. And there I see such light and splendour as tongues cannot describe nor ears comprehend.
>
> (Pseudo-*Theologia Aristotelis* I, ed. ʿA. Badawī, *Aflūṭīn ʿinda l-ʿarab. Plotinus apud Arabes. Theologia Aristotelis et fragmenta quae supersunt* (Cairo: Dār al-Nahḍa al-miṣriyya, 1966), 22.1–22.9; trans. by G. Lewis, in *Plotini Opera* II, *Enneades* IV–V ediderunt P. Henry et H.-R. Schwyzer, (Paris, Louvain: Desclée de Brouwer, L'Édition Universelle, 1959), 225, slightly modified)

This text has been worked out, on the basis of Plotinus' IV.8[6].1, 1–8,[38] within the circle of al-Kindī (some 150 years before Avicenna), and the author of the adaptation made every effort to emphasise the "Aristotelian" features already present in the Plotinian passage.[39] Actually, the latter contains some deliberate Aristotelian

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[35] V. Rose, "Die sogenannte Theologie des Aristoteles aus dem Arabischen übersetzt und mit Anmerkungen versehen von Fr. Dieterici" (book review), *Deutsche Litteraturzeitung* 24 (1883), col. 843–846.

[36] For a discussion of the label "*kalām lahū*" see *Plotino. La discesa dell'anima nei corpi*, 280–282.

[37] A passage of Avicenna's autobiography informs us that the set of his philosophical readings was completed when he was 18. The passage is translated as follows by Gutas (1988), 29: "So by the time I reached my eighteenth year I had completed my study in all these philosophical sciences. At that time my retention of knowledge was better, but today my grasp is more mature: otherwise the knowledge is the same, nothing new having come to me since." In the *Compendium of the Soul*, composed in the "early period" (see Gutas, *Avicenna and the Aristotelian Tradition*, 145), Avicenna outlines the field of theology in a way which is clearly reminiscent of the Prologue and the contents of the pseudo-*Theology*: this discipline establishes "the first creator, the first created, and the universal soul; the way in which creation occurs; the rank of intellect with respect of the creator, of soul to the intellect, of sublunar matter and the forms to the soul, and of the spheres, stars, and generated beings to matter and form; and why there is such a stark divergence in priority and posteriority among them" (trans. Gutas (1988), 19).

[38] See *Plotino. La discesa dell'anima nei corpi*, 131–136 (commentary of the Greek text) and 282–288 (commentary of the Arabic translation).

[39] This attitude is widely acknowkledged in scholarship from Kraus onwards.

echoes in the description of the life of the divine Intellect, which the soul shares when it returns to itself;[40] the Arabic adaptation even emphasises them, adding the passage on the identity of knowledge, knower and the known – a passage which does not come from Plotinus' *Descent of Soul into the Bodies*, but from Aristotle's *Metaphysics.*[41] One might wonder if the tendency, widespread in the *falsafa,* to make the Plotinian doctrines fit as much as possible within the Aristotelian frame, is the result of a pre-existing attitude of establishing a "harmony" between the Platonic and Aristotelian schools, or if it is an outcome of the creation of such literary pieces as the pseudo-*Theology*, or again if it is both.[42] Being as it may, this text became, in the eyes of the *falāsifa*, including Avicenna, an authoritative claim that once it has doffed[43] the body and temporarily turned into a *ǧawhar muǧarrad*, the human soul would be allowed to see the intelligible world as it is in itself and to see, above the intelligible world, the Divine Cause[44] itself.

The criteria for the soul to meet in order to reach a cognitive status in which the intelligible world is seen as it is in itself, are given in the verb *ḫala'a*, "to take off", "to doff", and the result of this action of the soul's return from the external world to itself is for it to become like a naked substance, a *ǧawhar muǧarrad*. The verb here is *ǧarrada*, "to divest", II of *ǧarada*, "to peel", "to remove the shell", from which comes *taǧrīd*: our "abstraction". In this context, "abstraction" is by no means a production of a concept in the soul out of τῶν αἰσθητῶν ἕξεις καὶ πάθη, as in the *De Anima* passage. It is – following in the footsteps of the Platonic and Plotinian doctrine of the soul – the result of the (temporary) awareness of something that the human soul usually ignores or has forgotten: the identity of its nature with the forms lying inside the intelligible realm. They are *ǧawāhir muǧarrada*, substances that are in themselves free from matter. Such forms are by no means τά(. . .) ἐν ἀφαιρέσει λεγόμενα, instead, they are located in the intelligible realm, *'ālam al-'aql* or *al-'ālam al-'aqlī*, beyond which there is only the First Principle itself. Doffing the body through a mental act of conversion, from exteriority to interiority, and from interiority to the upper world, the human being becomes like the forms and can see them.

A look at terminology confirms that Avicenna's doctrine of *taǧrīd* does not come from the *De Anima*: in the testimonies of its Arabic tradition, the ἀφαίρεσις of the passage quoted above[45] is not translated by a derivative of *ǧarada*, but by other

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[40] See *Plotino. La discesa dell'anima nei corpi*, 133–135.

[41] See *Plotino. La discesa dell'anima nei corpi*, 282–285.

[42] On the pivotal role of this topic in the constitution of Arabic philosophy see G. Endress, "La Concordance entre Platon et Aristote", l'Aristote arabe et l'émancipation de la philosophie en Islam médiéval', in B. Mojsisch and O. Pluta (eds.), *Historia Philosophiae Medii Aevi. Studien zur Geschichte der Philosophie des Mittelalters* (Amsterdam and Philadelphia: Grüner, 1991), 237–257.

[43] On the metaphor of doffing the body see Zimmermann (1986), 138–141.

[44] In our *Plotino. La discesa dell'anima nei corpi*, 230.4–230.6 (Arabic text) we read, with the mss we made use of and against the editions, "from that world to the Divine Cause", instead of "from that world to the divine world": see the commentary, 285–287.

[45] See above, footnote 30.

expressions.[46] So, it seems fair to conclude that either Avicenna had no Greek antecedent for his *taǧrīd*, or this antecedent was the *ǧawhar muǧarrad* of the pseudo-*Theology*.

However, this is not the entire story. Before the authorial speech, the "*Theology*" had already taken into account the relationship of the soul with the forms.

> When the mind receives the desire to go downwards, the soul is informed by it and the soul is then a mind informed with the form of desire, although the soul has sometimes a universal desire and sometimes a particular desire. When she has a universal desire she fashions the universal forms into actuality and governs them intellectually and universally, without departing from her universal world. When she desires the particular things, which are forms of her universal form, she adorns them and increases them in purity and beauty, and corrects what error has occurred in them, and governs them in a higher and loftier way than their proximate cause, which is the heavenly bodies.
>
> (Pseudo-*Theologia Aristotelis* I, ed. Badawī, 19.8–19.13; trans. Lewis, 219)

This passage is the adaptation of a sentence in the treatise *On the Immortality of Soul*, where Plotinus, echoing *Phaedrus* 246b6,[47] claims that if the soul, which by nature belongs in the intelligible realm, "comes" here – i.e., if it is not only a cognitive principle capable of seeing the forms, but also the immanent principle of the life of the body – this is due to the fact that it has an intrinsic "desire" to

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[46] The Arabic translation of *De Anima* that came down to us, attributed to Isḥāq ibn Ḥunayn, in correspondence of Aristotle's τά τε ἐν ἀφαιρέσει λεγόμενα at 432a5–6 has the expression *al-maqūlāt bi-l-ʾury min al-hayūla* (see ʿA. Badawī, *Arisṭūṭālīs fī al-nafs* (Cairo: Maktabat al-Nahḍa al-miṣriyya, 1980), 79.8). In the glosses by Avicenna on the *De Anima* published by R. M. Frank, "Some Fragments of Translation of *De Anima*", *Cahiers de Byrsa* 8 (1958–59), 231–251, the passage of 432a5–6 does not appear, but Aristotle's ἐξ ἀφαιρέσεως at 403b14 is rendered by *fī intizāʿ* (see Frank, 240). Other instances of ἀφαιρέω are rendered by *aḫaḍa min*: see G. Endress and D. Gutas, *A Greek and Arabic Lexicon (GALex). Materials for a Dictionary of the Mediaeval Translations from Greek into Arabic*. vol. I (Leiden, New York and Köln: Brill, 2002), 78 and 84. Finally, it is worth noting that the Arabic translation of the Neoplatonic paraphrase of *De Anima* edited by R. Arnzen totally skips over the Aristotelian doctrine of ἀφαίρεσις in correspondence with our passage. In this paraphrase the passage around 432a1–6 is rendered as follows (I am quoting Arnzen's German translation): "Er sagt: Eine vollständige Erkenntnis der Dinge, sei es der warnehmbaren oder intelligibilen, haben wir ausschließlich durch die Vernunft, denn in ihr sind die Formen aller Dinge aufgehoben. Er bringt dazu das folgende Beispiel vor: Alle Herstellungswerkzeuge vermögen nur mit Hilfe der Hand etwas zu bewirken. Die Hand ist also ein Werkzeug der Werkzeuge, und entsprechend ist die Vernunft die Form aller Formen, da sie die Formen begreift. Die Vernunft aber begreift die Formen, da sie, wie wir erklärt haben, allesamt in ihr sind; folglich werden die Dinge in der beschriebenen Art und Weise durch die Vernunft begriffen": see R. Arnzen, *Aristoteles' De Anima. Eine verlorene spätantike Paraphrase in arabischer und persischer Überlieferung*. Arabischer text nebst Kommentar, Quellengeschichtlichen Studien und Glossaren (Leiden, New York and Köln: Brill, 1998), 336 and 337.11–337.16 (Arabic text).

[47] The well-known axiom of *Phdr.* 246b6 reads ψυχὴ πᾶσα παντὸς ἐπιμελεῖται τοῦ ἀψύχου.

take care of it.[48] In the Arabic, the Plotinian sentence is partly misunderstood[49] and gives rise to a description of what happens when the soul "desires" a universal object and what happens when it desires an individual object (namely, the individual body it takes care of). Typically combining in his mind the *Phaedrus* with the *Timaeus*, Plotinus says that if the soul comes into the body, this is because it wants to make the sensible world imitate the beauty of the intelligible world. The Arabic reworking, on the other hand, claims that the soul "adorns" the individuals it takes care of and "increases them in purity and beauty."[50]

This passage is commented upon by Avicenna, as follows:

> What brings soul to perfection is a desired object which is either universal or particular. When it is a universal object, it becomes a universal actual form and imprints in it a universal imprinting without being cut off from its own world, which is intelligible and universal — I mean: this intellect belongs to the soul, notwithstanding the fact that soul is in some way in the body, taking it in its essence, in so far as it is connected with the active intelligences and is not separated from them as to be directed towards other things. However, if the objects of this desire are the particular things which are forms in matter, by imitatings the universal forms soul *adorns them and increases them in purity and beauty*, meaning that soul "increases" things carrying on in them the procedures of abstraction (*al-taǧrīdāt*) which are explained in the *De Anima* and *De Sensu et sensato*. Among them, the most perfect is the intellectual abstraction (*al-taǧrīd al-ʿaqlī*), which divests them from their material accidents (*al-lawāḥiq al-māddiyya*) and from all the things which wrap them like an integument (*ġiṭāʾ*) and are conceived of as if they belonged in the substances of these forms: but it is not so. For instance, the states grasped by sense-perception (*aḥwāl maḥsūsa*) are conceived of as if they belonged in the true essence of the things (*min ḥaqīqa al-ašyāʾ*), but it is not so. Indeed, the rational soul purifies the things from these involucres (*qušūr*) and divests them from the extraneous attachments (*lawāḥiq*), acting on them in a loftier way than their proximate causes, I mean the *heavenly bodies.*
> (*Šarḥ Kitāb Uṯūlūǧiyyā al-mansūb ilā Arisṭū li-Ibn Sīnā,* ed. ʿA. Badawī*, Arisṭū ʿinda l-ʿArab. Dirāsat wa-nuṣūṣ ġayr manšūra* (Cairo: Maktabat al-Nahḍa al-miṣriyya, 1947), 40.3–14)

In Avicenna's eyes, Aristotle is claiming here that the soul is brought to perfection by a desired object, and this is consistent with the comparison established in the *De Anima* between the actualisation of the intellect and the actualisation of sense perception, each one by its own object.[51] Such an actualisation can be produced either by an object which is already universal – and in this case the soul's potentiality is actualised without the soul being cut off from the intelligible world – or by other sorts of objects: those individual things which are forms in matter. In the latter case, by imitating the universal forms, the soul "increases" them in purity and beauty.

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48 IV 7[2], 13.1–8: Πῶς οὖν τοῦ νοητοῦ χωριστοῦ ὄντος ἥδε εἰς σῶμα ἔρχεται; ὅτι, ὅσος μὲν νοῦς μόνος, ἁπαθὴς ἐν τοῖς νοητοῖς ζωὴν μόνον νοερὰν ἔχων ἐκεῖ ἀεὶ μένει - οὐ γὰρ ἔνι ὁρμὴ οὐδὲ ὄρεξις - ὃ δ' ἂν ὄρεξιν προσλάβῃ ἐφεξῆς ἐκείνῳ τῷ νῷ ὄν, τῇ προσθήκῃ τῆς ὀρέξεως οἷον πρόεισιν ἤδη ἐπιτλέον καὶ κοσμεῖν ὀρεγόμενον καθὰ ἐν νῷ εἶδεν, ὥσπερ κυοῦν ἀπ' αὐτῶν καὶ ὠδῖνον γεννῆσαι, ποιεῖν σπεύδει καὶ δημιουργεῖ.

49 On this misunderstanding see my "Porphyry, Universal Soul and the Arabic Plotinus", *Arabic Sciences and Philosophy* 9 (1999), 47–88.

50 See *Plotino. La discesa dell'anima nei corpi*, 262–265.

51 *De Anima* III.4, 429a10–18.

"*Taǧrīd*, abstraction" consists precisely in this improvement of the status of the form embedded in matter, which is increasingly brought back to its pure and original status by the cognitive activity of the soul, divesting it from its material attachments. Quoting the titles of Aristotle's works, Avicenna emphasises that this is the *same* "abstraction" which is described in the *De Anima*, *Kitāb al-nafs*, and in the *De Sensu et sensato*, *Kitāb al-ḥiss wa-l-maḥsūs*.

The identity of the formulae in the *Kitāb al-Naǧāt* and in the notes on the pseudo-*Theology* go as far as to include the mention of "attachments, *al-lawāḥiq*" which, as the valves of a shell, must be removed (*ǧarada*) in order to get what lies inside, the pure form, the form as it is in itself. This is the abstraction Aristotle speaks of, both in the *De Anima* and in the *De Sensu et sensato*: the result of divesting the form from its material attachments is by no means something ontologically dependent upon the individual substance grasped by sense perception, i.e. a concept in the soul, like the Aristotelian ἐν ἀφαιρέσει λεγόμενα. The emphasis put on the consistency of the epistemological doctrine held in the *De Anima*, *De Sensu et sensato,* and the *Theology* speaks for itself. Avicenna reads in the *Theology* as un-Aristotelian and unacceptable doctrines as the pre-existence of the human soul to the creation of its body,[52] and in this case has no way out but to claim that the text, in that passage, is corrupted.[53] Now he is trying his best to demonstrate the consistency between the doctrine of human knowledge, as presented in *De Anima,* and the one proclaimed in the *Theology*. Should he have had the suspicion that the *Theology* was not by Aristotle, he would hardly have embarked in this attempt to make this theory fit with the admittedly different doctrine held in *De Anima*.

Another conclusion can be drawn, namely that, when in the *Kitāb al-Naǧāt* Avicenna talks of pure abstraction, he is operating under the assumption that the soul is able to initiate the process of disentangling pure form from matter through the degrees of abstraction precisely because it is able by nature to reach the intelligible realm, where the Forms can be seen as they are, independently of the material attachments grasped by sense-perception and representation. The light shed from the Agent Intellect on the human soul is but a way to express the idea that both, the Agent Intellect and the soul, see the same intelligible objects; but, whereas the former does it eternally and by itself, the latter can do it only at times, thanks to the assistance of the Intellect. This framework – in the last resort, the Plotinian one – was known to Avicenna through the pseudo-*Theology*, and we should not forget that Plotinus' account of the Intellect is often purposely Aristotelian in wording and content. In several treatises (chiefly V 3[49] and V 5[32], both translated into Arabic) Plotinus endorses the Aristotelian description of the divine life of the Intellect as an eternal, immobile actuality of self-reflexive thinking, and this played a role

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[52] See Th.-A. Druart, "The Human Soul's Individuation and Its Survival After the Body's Death: Avicenna on the Causal Relation Between Body and Soul", *Arabic Sciences and Philosophy* 10 (2000), 259–273; see also M. Sebti, ''Une épître inédite d'Avicenne, *Ta 'alluq al-nafs bi-l-badan (De l'attachement de l'âme et du corps*): édition critique, traduction et annotation", *Documenti e studi sulla tradizione filosofica medievale*, 15 (2004), 39–79.

[53] See *Plotino. La discesa dell'anima nei corpi*, 109–110.

in transmitting to the Arab readers, from the beginnings of *falsafa* to the age of Avicenna and even later, the idea that the pseudo-*Theology* was a book in which Aristotle wrote down his doctrines on the suprasensible causes, Soul, Intellect and the First Principle.

All this is far from solving the problem of the inner consistency of the "double arrow pattern", but it helps in our understanding of how it was possible for Avicenna to work out such a description of cognitive processes. He had to combine two accounts of knowledge that were both Aristotelian to his eyes, as incompatible as they might seem to us. His early acquaintance with the pseudo-*Theology*, as well as the notes he wrote on it in the *Kitāb al-Inṣāf* towards the end of his life, help in understanding the doctrine of abstraction in his major works, the *Kitāb al-Šifā'* and the *Kitāb al-Naǧāt*. Avicenna's attempt at reconciling Aristotelian abstraction with the direct grasping of intelligible forms is by no means unprecedented: as L. P. Schrenk[54] and R. Chiaradonna[55] remark, respectively for Alcinous and Porphyry, this epistemological move was repeatedly made by those Platonists who, on the more general level nowadays labelled as "ontological", held also that Aristotle's account of the physical world could be appropriately crowned by Plato's description of the suprasensible realm. Albeit endorsing several Aristotelian doctrines, Plotinus did not share in this idea and it was only with Porphyry that the attempt at reaching the "harmony between Plato and Aristotle" became a *Leitmotiv* in the philosophical schools of late Antiquity.[56] From its beginnings, Arabic philosophy seems to follow in the footsteps of this late Ancient pattern; however, on closer inspection the peculiar features of the Arabic version of this topic appear to combine reception and

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[54] L. P. Schrenk, ''Faculties of Judgment in the *Didaskalikos*", *Mnemosyne* 44 (1991), 347–357; idem, ''The Middle Platonic Reception of Aristotelian Science", *Rheinisches Museum* 136 (1993), 342–359.

[55] R. Chiaradonna, "Concetti generali, astrazioni e forme in Porfirio", in Ch. Erismann (ed.), *De la logique à l'ontologie. Études sur la philosophie de Porphyre et son influence durant l'Antiquité tardive et le haut Moyen Âge, Atti della giornata di studio "La filosofia di Porfirio e la sua ricezione tardo-antica e alto-medievale", Istituto Svizzero, Roma, 02/04/2004* (Paris: Vrin forthcoming); see also, for a comparison between Porphyry and Plotinus, R. Chiaradonna, "Plotino e la teoria degli universali (*Enn.* VI 3[44], 9)", in V. Celluprica, R. Chiaradonna and C. D'Ancona (eds.), *Aristotele e i suoi esegeti neoplatonici. Logica e ontologia nelle interpretazioni greche e arabe. Atti del convegno internazionale, Roma, 19–20 ottobre 2001* (Napoli: Bibliopolis, 2004), 3–35; idem, "Porphyry's Views on the Immanent Incorporeals", G. Karamanolis and A. Sheppard (eds.), *Studies on Porphyry*, BICS Supplement 98 (London, 2007), 35–49.

[56] On Porphyry's role in the creation of the topic of "harmony" see the fundamental study by P. Hadot, "L'harmonie des philosophies de Plotin et d'Aristote selon Porphyre dans le commentaire de Dexippe sur les Catégories", in *Plotino e il neoplatonismo in Oriente e in Occidente, Atti del convegno internazionale, Roma, 5–9 ottobre 1970* (Roma: Accademia Nazionale dei Lincei, 1974), 31–47 (repr. as "The Harmony of Plotinus and Aristotle according to Porphyry" in R. Sorabji (ed.), *Aristotle Transformed. The Ancient Commentators and Their Influence* (London: Duckworth, 1990), 125–140); on the Middle-Platonic influence on Porphyry's elaboration of this topic see M. Zambon, *Porphyre et le Moyen-Platonisme* (Paris: Vrin, 2002); see also G. Karamanolis, "Porphyry: The First Platonist Commentator on Aristotle", in P. Adamson, H. Baltussen and M. W. F. Stone (eds.), *Philosophy, Science and Exegesis in Greek, Arabic and Latin Commentaries*, Bulletin of the Institute of Classical Studies, Supplement (London 2004), 197–220.

original re-creation,[57] and it seems to me that it is useful to consider Avicenna's doctrine of abstraction against this background.

Acknowledgments My warmest thanks are due to Riccardo Chiaradonna for discussing with me a first draft of this paper and making many important remarks. For all its shortcomings I am solely responsible.

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[57] An example of such a re-creation can be found in my paper "The Topic of the 'Harmony Between Plato and Aristotle': some Examples in Early Arabic Philosophy", A. Speer and L. Wegener (eds.), *Wissen über Grenzen. Arabische Philosophie und Lateinische Mittelalter* (Berlin: de Gruyter, 2006), 379–405.

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The Ontological Entailments of Averroes' Understanding of Perception

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Averroes (1126–1198) is the foremost medieval commentator on Aristotle. As such, his thoughts on perception are found in a number of his writings, particularly in his commentaries on the *Parva naturalia*[1] and the *De anima*. Helmut Gätje, Harry Wolfson and others have studied Averroes' views on this subject,[2] and they have located him within the Islamic philosophical tradition of his predecessors.

As these studies have shown, "perception" is a term that bridges three activities of the soul: the sensation that the senses experience, and the imaginative and intellectual apprehensions subsequent to that sensation. Perception thus involves various faculties of the soul as then conceived: the sense organs, the common sense, the imaginative faculty, the cogitative faculty,[3] memory, and the rational faculty.

The path that leads from sensation to cognition has a guiding hand, an external agency that Averroes understood as part of the Peripatetic tradition, though its origins lay with Alexander of Aphrodisias. It was he who elevated Aristotle's immanent active principle of intellection to a transcendent sphere, equivalent to that of other

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[1] Averroes wrote on the first six of the nine Aristotelian Treatises grouped under this name, the entire collection called in Arabic after the first treatise, Kitāb al-Ḥiss wa l-Maḥsūs (the Latin *De sensu et sensibilibus*). His short commentary, or epitome, to these works is extant; it has been edited in Arabic, Hebrew and Latin, and has been translated into English as well. Cf. the Arabic edition of H. Gätje, *Die Epitome der* Parva Naturalia *des Averroes* (Wiesbaden: Harassowitz, 1961), as well as that of H. Blumberg, *Averrois Cordubensis Compendia Librorum Aristotelis qui* Parva Naturalia *vocantur*, published by The Medieval Academy of America (Cambridge, MA, 1972). Under the auspices of the Medieval Academy, Blumberg also edited the medieval Hebrew translation of Moses ibn Tibbon in 1954, and A. E. Shields edited the Latin translation of Michael Scot in 1949.

[2] Cf. Gätje's *Studien zur Überlieferung der aristotelischen Psychologie in Islam* (Heidelberg: C. Winter, 1971), and see his article, "Die 'inneren sinne' bei Averroes", *Zeitschrift der Deutschen Morgenländischen Gesellschaft* 115 (1965), 255–293. See too Wolfson's path breaking article, "The Internal Senses in Latin, Arabic and Hebrew Philosophic Texts", *Harvard Theological Review* 28 (1935), 69–133; repr. Wolfson, *Studies in the History of Philosophy and Religion* (Cambridge, MA: Harvard University Press, 1973), I: 250–314.

[3] Concerning this faculty, cf. now R. Taylor, "Remarks on Cogitatio in Averroes' Commentarium Magnum in Aristotelis De Anima Libros", in G. Endress, J. A. Aertsen and K. Braun (eds.), *Averroes and the Aristotelian Tradition* (Leiden: Brill, 1999), 217–242.

S. Knuuttila, P. Kärkkäinen (eds.), *Theories of Perception in Medieval and Early Modern Philosophy,*

celestial immaterial intelligences. Averroes vacillated over the role of the Agent (or Active) Intellect, as it is called, now expanding it to being a formal cause of some or all sub-lunar beings,[4] now limiting it to being an efficient if remote cause of intellection in human beings.[5]

It is with the Agent Intellect that the science of the soul assumes a metaphysical dimension, and that Averroes' understanding of perception takes on ontological entailments. In this paper, I should like to concentrate on this less well-understood aspect of his teachings, particularly as brought out by recent and forthcoming translations, respectably, of his Middle and Long Commentaries on *De anima*.[6] Three issues will be discussed: The goal and purpose of the science of the soul; Averroes' use of sensory and imaginative intentions; and the role and relation of the material and Agent Intellects.[7]

1 Goal and Purpose

The primacy of the study of the soul is stated at the very beginning of Aristotle's text, and Averroes can hardly expand upon it. This study is basic to other sciences, particularly the natural sciences. Its two main divisions teach us how we know and how we act, which faculties are involved in cognition, which in desire, and which in both. For Averroes, a major goal of Aristotle's text is to clarify the nature of the rational faculty and its many divisions, themselves involved in both thought and action. As Averroes says in commenting in the *Long Commentary* (*LC* 517, 49:12) on Aristotle's statement at *De an*. III.10 (433a14) differentiating the practical from

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[4] Cf. H. Davidson, *Alfarabi, Avicenna, and Averroes, on Intellect* (Oxford: Oxford University Press, 1992), 237–238 (The Arabic edition of the *Metaphysics Epitome* to which Davidson refers for this view of the Agent Intellect, *Averroes Compendio de Metafísica*, ed. C. Quirós Rodríguez (Universidades de Córdoba, Malaga y Sevilla), was repr., together with the Spanish translation done by its editor, in 1998. Josep Puig Montada has written an introduction to the text, and cf. his remarks on the diverse presentations of the role of the Agent Intellect in this book, pp. xxiii–xxiv). This view, stressing an ontological as well as epistemological function for the Agent Intellect, coheres best with that interpretation of the *De anima* commentaries that we offer below. See too D. L. Black, "Conjunction and the identity of Knower and Known in Averroes", *American Catholic Philosophical Quarterly* 73:1 (1999), 172–175.

[5] This is the view that Davidson (1992), 256, considers Averroes' later position.

[6] Cf. *Averröes: Middle Commentary on Aristotle's De anima*, ed. and trans. A. L. Ivry (Provo, Utah: Brigham Young University Press, 2002); R. Taylor, trans., *Averroes' Long Commentary on* De anima *of Aristotle* (Yale University Press, 2008). I take this opportunity to thank Prof. Taylor for his kindness in sending me a copy of his translation, and for sharing his interest in Averroes with me over the years. Most of the quotations given below of the Long Commentary are taken from his translation, pegged (by page, paragraph and line) to the Latin edition of F. S. Crawford, *Averrois Cordubensis: Commentarium Magnum in Aristotelis De anima Libros* (Cambridge, MA: The Medieval Academy of America, 1953).

[7] Cf. also A. L. Ivry, "Averroes' Three Commentaries on De Anima", in *Averroes and the Aristotelian Tradition* (footnote 3 above), 198–216.

the speculative intellect, in terms of their purpose, "For the end of the speculative (intellect) is just to know, while that of the practical is to act."

Beyond these stated goals for the study of the science of the soul, there lurks a further one that Averroes, following Aristotle, occasionally acknowledges; a goal that is closer to the nerve of the people of his day (and later). It is the pursuit of immortality, which for Averroes is the pursuit of the limits of immortality. Here Averroes has to tread very carefully, for his views on monopsychism cannot be made public too explicitly. I believe that is why he had so little to say on this and related subjects in his Middle Commentary, the work written particularly for the caliph and his court.[8]

For example, *De an*. II.4 (415a29), followed by Averroes in *LC* and *MC* (the Middle Commentary) says that individual animals and plants naturally desire to reproduce, in order to share, as much as possible, in "the eternal and divine," *hina tou aei kai tou theiou metexôsin*.[9]

In his commentary to this passage at *LC* 182, 34:53, Averroes makes an unusual concession to a putative orthodox readership, in saying that "since divine *sollicitudo* could not make (an individual plant or animal) last forever as an individual, it 'showed pity' (*miserta est*) in giving it the power by which it can last forever in species." However, in the following mention of participation in "the eternal and the divine" at *De an*. 415b3,[10] Averroes explicitly identifies this communicatio as occurring with the heavenly body or bodies (*LC* 184, 35.26), by which he means the Agent Intellect. The natural urge of all living creatures to participate in eternal being is thus given a purely naturalistic interpretation, there is no "return" of the soul of plants or animals to a world soul, no theistic presence orchestrating matters.[11]

Yet it is not only eternal life, even of a peculiar kind, that Averroes wishes to inform his readers of. He is also interested in affirming, with Aristotle, the finite goals of intellection. Aristotle, in his *De an*. I.3, 407a23 critique of the notion of mind as having circular motion, mentions that both practical and theoretical thinking has limits, goals at which the process terminates. Averroes echoes this sentiment, in both the Middle and Long commentaries (*MC* 24, 66:21–24; *LC* 69, 48:69–74). Cognitions are finite, both in content and duration.

This position assumes the purpose of thinking is to achieve some goal, a thought other than the act of thinking itself. The final cause, or goal, of thought thus lies beyond it. This view of intellection, however commonsensical, is nevertheless challenged by Aristotle's own view of the ultimate good, as expressed in the

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[8] Cf. the *Middle Commentary*, ed. Ivry, p. xiv.

[9] The LC lemma at 34, 181.1 treats "the eternal and divine" as one term, *sempiterno divino*; and MC 56:2 just uses the Arabic equivalent of *sempiterno*, i.e., *al-abadî*. Averroes is probably deliberate in referring to the eternal nature of the universe as sempiternal, and for striking the term "divine" here in the Middle Commentary. He probably did not want to raise questions in the minds of the readers of this commentary as to his position on the created or *a parte ante* eternal nature of the universe, or on his equation of the eternal with a divinity not limited to God.

[10] Given as *sempiterno divino* again at *LC* 183, 35:4.

[11] The *Middle Commentary,* it should be noted, does not have this clarification, not having given the reader a false impression of God's solicitude to begin with that then needed qualification.

Nichomachean Ethics, X.7. There thinking is its own reward, the highest good, having no end beyond itself. Averroes, in his commentary to that book, would appear to be in agreement with Aristotle.[12] Moreover, the ultimate goal of intellection for Averroes, as he states in his short essays on conjunction,[13] is to achieve a state of complete conjunction with the Agent Intellect, one that approaches a mystical state. These hermetic views of intellection, however, are kept out of Averroes' *De anima* commentaries, where the greatest obligation is to convey the thought of Aristotle, as Averroes conceived it.

Averroes' admiration of Aristotle is shown in his lengthy Long Commentary remarks (*LC* 430, 14:75–433, 14:153), on Aristotle's *De an*. III.4 (429b31) analogy between the intellect's potential reception of intelligibles and that of a tablet's potentiality to receive writing. He reviews the different understandings of Alexander and Themistius and others on this, and finds Themistius & Co. closer to the truth, as represented by the indispensable Aristotle. "For this [issue] is so difficult that, if Aristotle's account of this were not found, then it would be very difficult to come upon it, or perhaps impossible, unless someone such as Aristotle were found. For I believe that this man was a model in nature and the exemplar which nature found for showing the ultimate human perfection in matters."[14] As opposed to the praise he lavishes on Aristotle, Averroes is highly critical of Alexander and those "modern thinkers" whom he sees as following him (Alfarabi and, presumably, Ibn Bājja). Alfarabi might also have expressed something "unthinkable", Averroes' says, namely, the denial of conjunction with the separate intellects (effectively, with the Agent Intellect); though Averroes adds that Ibn Bâjja said all the Peripatetic philosophers, which would include Alfarabi, accept the possibility of conjunction and its role as the end or final goal for human beings.

Averroes then concludes this section with a cryptic remark: "Perhaps this is one of the reasons why we see that the customs and habits of most of those devoting themselves to philosophy in this time are corrupt; and this has other causes not unknown to those giving themselves over to the study of practical philosophy" (*LC* 433, 14:162–165).

While one may only conjecture what Averroes is alluding to here, it seems to me that he is accusing his Muslim predecessors and probably his contemporaries (whose identities we do not know) of waffling on the issue of conjunction as he understood it, with consequent loss of their moral fiber. His interpretation, of course,

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[12] Cf. *Averroes' Middle Commentary on Aristotle's Nicomachean Ethics* (Hebrew), ed. L. V. Berman (Jerusalem: Israel Academy of Sciences and Humanities, 1999), 337–340.

[13] Cf. J. Hercz (ed. and trans.), *Drei Abhandlungen über die Conjunction des separaten Intellectes mit dem Menschen, von Averroes (Vater und Sohn)* (Berlin, 1869). M. Geoffroy and C. Steel offer a French translation of the two treatises by Averroes *père* in *Averroès: La Bèatitude de l'Âme* (Paris: Vrin, 2001), 200–236. See too K. Bland (ed. and trans.), *The Epistle on the Possibility of Conjunction with the Active Intellect by Ibn Rushd with the Commentary of Moses Narboni* (New York: Ktav Pub, 1982), 87, 103.

[14] The *Long Commentary*, 433, 14:142 for the last part of this sentence reads: "Credo enim quod iste homo fuit regula in Natura, et exemplar quod Natura invenit ad demonstrandum ultimam perfectionem humanam in materiis" (ms. variant, in naturis).

resulted in the loss of individual immortality, a heretical idea in Islam. An adroit student of political or practical philosophy would understand the need at least to equivocate on this issue, Averroes acknowledges, doing just that.

This personal and political note that Averroes introduces here, as well as the sharp praise and criticisms that he bestows on his philosophical predecessors in the Long Commentary, are absent from the Middle Commentary. As I have tried to show elsewhere, the Middle Commentary is generally more accommodating to Muslim sensibilities than the Long Commentary, and itself avoids the topic of conjunction as much as possible.[15] This difference in approach and tone may well be due to the different audiences to which each commentary was addressed, the Middle to the caliph and his court, the Long to fellow philosophers.

2 Sensory and Imaginative Intentions

De an. II.5, 418a1 is a discussion of the two stages of potentiality that a sensing subject possesses, and the inadequacy of the terms "affection" and "alteration" for their transition to actuality. In both commentaries, Averroes elaborates upon the distinction between receiving the actual form of a sensible object and receiving its sensible "intention" (which carries within it imaginative and intelligible intentions as well). As Averroes says in the *Middle Commentary* (*MC* 169, 64:18), "the senses are potentially the intentions of the perceived objects, not the objects themselves." As such, they are like the perceived object, "by virtue of resembling it." This distance and distinction between the sensible object and its sensible intention (the sensible form belonging to the object, even while its intention "belongs" to, or is a function of the perceiver) allows the perceiver to be aware of the sensation, and not simply to be absorbed by it and totally identified with it (cf. *LC* 223, 62:21–28).[16]

Averroes summarizes the process of sensation in a corresponding section of the *Long Commentary* (225, 63:53) in these words: "That individual intention is what the cogitative power discerns from the imagined form and refines from the things which were conjoined with it from those common and proper sensibles, and it deposits it (ea/eam var.) in the memory. This same [individual intention] is what the imaginative [power] apprehends, but the imaginative [power] apprehends it as conjoined to those sensibles, although its apprehension is more spiritual."[17]

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[15] Cf. the introduction to the *Middle Commentary*, ed. Ivry (above, footnote 6), p. xxvi.

[16] Cf. the full exposition of Averroes' use of intentions in M. A. Blaustein, *Averroes on the Imagination and the Intellect* (unpublished dissertation, Harvard, 1984), 40–47, and 86.

[17] Thus, the intentions or representations of the cogitative faculty retain their particularity, though they are rendered more essential, and hence more intelligible, than the same individual intentions as apprehended by the imaginative faculty. Cf. Blaustein, ibid., 77, 116; Taylor (1999), 226. The cogitative faculty is thus a halfway house on the road to abstract reasoning, critical particularly for

These "intentions" originate semantically and conceptually with *De an*. II.12, 424a24, expressing in one word that which Aristotle has characterized as *toiondi, kai kata ton logon*, rendered by Ross as "of such and such a sort, and according to form," (and by Hicks as "a particular quality and in respect of its character or form.)" Averroes calls these forms "intentions," *ma'ān* in the *Middle Commentary* (230, 87:7), and it is as *in intentione* that *kata ton logon* is translated in the lemma of the Long Commentary (*LC* 317, 121:10). These intentions are "in the soul," i.e., they are what the sense organs perceive, related to but distinct from the sensation as it originates in the sensible object.

In the *Middle Commentary* (232. 87:22), Averroes says that when the sense receives the intention, "they become one thing." He is slightly more expansive in the Long commentary (318, 122:6): "What receives that power which is an intention separated from matter is what primarily senses. When it has received it, they are made the same, though (Taylor: but) they differ in number. For what senses is a body, and it does not sense because it is a body, nor is the sense a body, but an intention and a power of that body which is what primarily senses."

De an. III.3, 428b11 asserts that imagination does not occur (originally) apart from sensation. Averroes qualifies this in both commentaries to stress the role of the sensible intentions that exist in sensation; it is they that the imagination relates to. (See *LC* 160, 372:19, and *MC* 273, 106:15.) In the *Middle Commentary*, Averroes writes, "Thus, imagination must be nothing other than a faculty perfected by the intentions found in the common sense."

At *De an*. III.4, 429a31, Aristotle speaks of the senses losing their power when receiving too strong a sensation, this being an acknowledgement of the physical or material aspect of sense faculties, as well, implicitly, as of the physical impact that sensations may have. In contrast, the intellect is considered totally separate and unmixed with any organ, there being no physical affect that can distort its ability to think intelligibles.

In the *Middle Commentary* here (277, 109:4), Averroes paraphrases this view to state that the intellect is completely unmixed with any material (literally, "hylic") form, unlike the sensory faculty, which is "mixed, to a degree, with the subject in which it is found." This mixture, one might think, is with the sensory intentions, for they are the entities that convey the image of the sensible form to the senses. Yet these intentions are immaterial to begin with, removed from the corporeal form of the datum. It is, therefore, probably the medium between the sensory object and the subject that affects the senses physically. The aspect of the intention in the sense, as later in the imagination, that renders it corruptible is its individuality, not its physicality, since the imaginative intention, like the sensible intention, is not, qua intention, physical.

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the activities of the practical intellect. It is, accordingly, striking that Averroes does not develop the role of the cogitative faculty in the *Middle Commentary*.

3 The Role and Relation of the Material and Agent Intellects

In *De an*. I.3, 405b31, Aristotle begins his critique of the definition of the soul as that which is self-moving or capable of self-motion. In discussing Plato's Timaeus construal of the creation of a universal soul, Aristotle explains in *De an*. 407a3 that Plato is really thinking of what is known as *nous*, mind (or intellect); and that "the mind is one and continuous in the same sense as the process of thinking (*noēsis*), thinking being identical with thoughts (*hē de noēsis ta noēmata*)." The unity of these thoughts is one of succession, not of magnitude, Aristotle says, proceeding to describe the absurdities that result from positing magnitude to the mind.

Averroes follows Aristotle well in this discussion. He corrects his lemma to say, in *LC* 64, 47:22, *et intelligere est res intellecte*, "thinking is the things thought," and his comment merely emphasizes this identification. *MC* 22, 61:20 also captures Aristotle's intention, saying *Al-'aql huwa al-taṣawwur bi'l-'aql wa kāna al-taṣawwur bi'l-'aql huwa al-ma'qūlāt*: "the intellect is the process of thinking (or 'conceptualization,' literally, 'representation by means of the intellect'), and the process of thinking is (the same as) the intelligibles."

We have here an explicit identification of subject and object, to the point that the subject is effaced, in effect, by the object, constituted by it. The mind is an immaterial activity, when active it is equivalent to the thoughts it thinks, the intelligible objects of its intellection. The composition that forms an identifiable mind or intellect is due, as Aristotle and Averroes agree, to the succession of thoughts a given individual has, these intelligible objects create an individual mind. Initially, though – and essentially – there is no separate or substantive mental base to which the successive thoughts can adhere, putting into question the very notion of these being the collective thoughts of a given individual.

At *De an*. I.4, 408b18 Aristotle lays the ground for his later remarks concerning the unique nature of the rational faculty, in saying that the intellect, *nous*, is a "certain substance" (*ousia tis*) that "comes to be" (*egginesthai*) but is not destroyed. In *LC* 87, 65:13, Averroes identifies this substance as the *intellectus materialis*, the "material" intellect. Agreeing with Aristotle that this intellect is not corruptible in itself, Averroes further comments that it is corruptible – as well as generable – in relation to that part of the body in which it acts or by which it is affected. In this, Averroes is echoing Aristotle's statement at *De an*. 408b24, that "thinking (*to noein*) and reflecting (*to theōrein*) decline through the decay of some other inward part and are themselves impassible" (following Smith and Barnes' translation).

Averroes is here alluding to the essential separateness of the material intellect from the body, and specifically from the imaginative faculty that provides it with its raw data. These particular imaginative forms, or intentions, do not survive as such, as neither do the corporeal imaginative faculty and sense organs that provided them. The material intellect is thus ephemeral in any particular human instantiation, though in itself it is immortal.[18]

[18] The *Long Commentary* (89, 66:23) identifies this corruptible aspect of the intellect as the imaginative intellect, called also in the Third Book, he says, the "passible intellect". The *Middle*

The "coming to be" or origination of the intellect in a particular individual presumably is likewise a temporal instantiation of an eternal substance, "new" only in relation to the individual; it is not the creation of an "independent" substance in the Platonic sense of a created yet immortal individual soul.

At *De an*. III.5, 430a17, Aristotle speaks of the separate, impassive and unmixed (*chōristos kai apathēs kai amigēs*) nature of the active aspect of the intellect, its substance entirely activity, *energeia*. Averroes enlarges upon this statement in the *Middle Commentary* (297, 116:21–23) by saying that this intellect (treated as distinct from the material intellect) is both "form for us" (i.e., really form for the material intellect, actualizing its potentiality, but through it creating our individual intellects and essential identity); and it is "the agent for the intelligibles", i.e., responsible for the intelligible dimension of sensible forms. Averroes then says, "the intelligent and intelligible aspects of this intellect are essentially the same thing, since it does not think anything external to its essence" (*MC* 116, Arabic 18, 19).

The unified nature of the intellect is brought out dramatically in this sentence, as well as the fact that the Agent Intellect, always actual, is the sum total of all sub-lunar forms *qua* intelligibles, so that it does not, cannot, think anything external to its essence. It follows, then, that it is immortal, as Averroes then says, following *De an*. 430a23. With Aristotle, Averroes also says that this immortality belongs to the intellect "when separated from the body" (*MC* 117:2), precluding a more personal immortality.

While Aristotle distinguishes here between the active part of the intellect, which is the immortal part, and the passive, perishable part, Averroes needs to modify this division, given his view of the separateness, and hence immortality of both the material and Agent intellect (cf., e.g., *LC* 447, 20:101). The conjunction that the Agent intellect has with a particular material intellect brings it into connection, an "accidental" or "incidental" connection, with a certain set of universals realized in a person's mind; but that connection is "accidental", or incidental to the essential nature and immortal substance of the intellect.[19]

The Agent Intellect thus knows and does not know the world it informs. It knows it as it knows itself, in universal terms, and constantly; it does not know it in the individual instantiations of these forms, with their particular corporeal entanglements. The parallel with God's relation to the entire world is striking.

In commenting on *De an*. II.5, 417b16, Averroes remarks in the *Long Commentary* (219, 59:11) that, "the first actuality of sense comes from the Agent Intellect" (*Opinatur enim quod prima perfectio sensus fit ab intelligentia agenti*), and it is only as a second actuality that sensible objects weigh in to affect the senses. I think this can be understood by considering the necessary involvement of the Agent Intellect in the sensory faculties of the soul. Perception is part of the process of rationation; it

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Commentary (31, 84:1) calls that which perishes the imaginative forms and the practical intellect, due to which loss we neither remember, love, nor hate, after death.

[19] Cf. A. L. Ivry, "Averroes on Intellection and Conjunction", *Journal of the American Oriental Society* 86.2 (1966), 78–80.

supplies the building blocks for the eventual abstractions of intellect, but the imprint of intelligence is already found in the senses.

Averroes refers to Aristotle's *On Animals* (i.e., the *Generation of Animals*) in connection with the above quoted sentence, though in that book, at II.3, 736b27, Aristotle refers to reason as that which alone enters from outside the body, having no connection with any bodily activity. Averroes clearly understood Aristotle to be speaking of the initial emergence of reason in a person, coming from outside the body, i.e., from the Agent Intellect; but that it immediately informed all aspects of a person's soul, being the formative principle of all the faculties.

For Averroes, the presence of the Agent Intellect qua formal principle in the subject as well as object of sensation is expressed in his reading of *De an*. 417b27, which, as he explains, means that "the cause for the existence of that disposition in us for the knowledge of sensibles is the same as the cause for their existence in the senses themselves" (*LC* 60, 220:32).

At the end of his comment to this passage, Averroes acknowledges the presence in sensible bodies of an "external mover", ultimately the Agent Intellect. It is responsible for their potential intentional intelligibility, but "Aristotle was silent about this because it is hidden in the case of sensation and is apparent in the case of intellect" (*LC* 60, 221:55).

The concise but comprehensive manner in which the *Middle Commentary* expresses the role of the Agent Intellect and its relation to the material intellect in persons assists us in understanding the more elaborate, but also frequently more perplexing statements in the corresponding passages of the *Long Commentary*. Thus, at *LC* 441, 19:15, Averroes says that the Agent Intellect "understands nothing", *nichil intelligit*, "of things that are here", *ex eis que sunt hic*. By this, I believe Averroes means that the Agent Intellect has no relation to things that are here in the manner in which they are here, as mixed with matter. It knows the things that are here in their universal dimension, which is how they exist in it, and are it; and indirectly, "accidentally", through the material intellect, the Agent Intellect is involved with the intelligibles that form the particular intellect of an individual, though not knowing them as such.

For Averroes, the presence of the Agent Intellect qua formal and efficient principle in the subject as well as object of sensation is expressed in his reading of *De an*. II.5, 417b22–27, a passage that affirms that universals, unlike sensibilia, are "somehow (*pōs*) in the soul", and that this is so for the sciences that deal with sensible objects too. He understands this latter statement to mean "the cause for the existence of that disposition in us for the knowledge of sensibles is the same as the cause for their existence in the senses themselves" (*LC* 60, 220:32).

Averroes understood Aristotle to be referring to imaginative intentions as being "somehow" in the soul, concomitant with the reception of sensations (*LC* 60, 220:18). These imaginative intentions are part of the package that a sensible object offers to a perceiver, even as the intelligible, universal intentions are as well. That is, the sensible dimension of every object has the potential of being perceived by both the imaginative and rational faculties, its sensible form has these aspects, or "intentions", too.

From the perspective of the perceiver, the imaginative intention precedes the universal intention, and it is this point that Averroes believes Aristotle is alluding to in qualifying the way universals are found in the soul. The sensible object itself thus has imaginative as well as intelligible dimensions that are not extrinsic to it, though they need an extrinsic agent to bring them from potentiality to actuality. Both the potential and actual intelligibility of sensible objects are witness to the primary role of the Agent Intellect in informing the nature of all sub-lunar being.

Averroes' discussion of the nature of the material and Agent Intellect in the *Long Commentary* is much more developed than that he offers in the *Middle Commentary*, as is well known. Though he wishes, in the *Long Commentary*, to discuss the passive/receptive aspect of the intellect first, as Aristotle does, Averroes is soon drawn to emphasize the dual aspect of the intellect, it playing an active as well as passive role in cognition. "But since it seems that the forms of external things move this power in such a way that the mind abstracts them from matters and makes them first to be intelligible in act after they were intelligible in potency, on the basis of this it seems that this soul is active, not passive. Therefore, inasmuch as the intelligibles move it, it is passive, and inasmuch as they are moved by it, it is active" (*LC* 384, 4:47–53).

Averroes explains the intellect's reception as more than mere passivity; it takes the potential intelligibles that it receives in the form of imaginative intentions, and (through the agency of the Agent Intellect) converts them into actual intelligible notions. This differs from the passive reception that the senses give to sensations, but there is a parallel in the imaginative faculty's active reworking of sensible intentions into fantasies, when the imagination is unconstrained.

It could be argued, however, that the Agent Intellect is present at every stage of perception, in that it is the (remote) efficient cause moving each faculty of the soul from potentiality to actuality. The Agent Intellect thus serves as the formal, efficient and final cause of the soul, encompassing all of its faculties. After all, the soul is one in the individual, the rational faculty just the last stage in cognition, and dependent on all the other faculties for its operation.

After rejecting a number of other approaches to describe the material intellect, Averroes follows Aristotle at *De an*. III.4, 429a21, which read in the text he had that the nature of the material intellect is possibility (*LC* 387. 5:2,10). This possibility is the potential to receive "all the intentions of the universal material forms" (*LC* 387, 5:29); Averroes here, as elsewhere (*LC* 388, 5:37) acknowledging with Aristotle the universal dimension of intelligible intentions. Thus, to say as Averroes has, following Aristotle, that universals exist only in the mind, is not to reduce them to subjective status. Universal forms are intelligible objects that have an ontological status in the Agent Intellect and inform specific forms with their generic constitution. They inhere as intelligible intentions in sensible forms, requiring an intelligent being to cognize them, but not to validate their existence as specific, eternal forms.

After Averroes presents the views of his predecessors on the material intellect in the *Long Commentary*, he offers a comment that is striking: "What seems to be the case, that the agent intellect sometimes understands when it is joined to us and sometimes does not understand, results for it because of the mixture, namely

on account of its mixture with the material intellect" (*et hoc quod videtur, quod intellectus agens quandoque intelligit quando fuerit copulatus nobis, et quandoque non intelligit, accidit ei propter mixtionem, scilicet propter mixtionem eius cum intellectu materiali*) (LC 390, 5:91–94). This sentence, or one close to it, is expressed more transparently in the *Middle Commentary* (117, 298:7: "Thus, when conjoined to us, the intellect thinks the intelligibles which are here, while when separated from us, it thinks itself" (*fahuwa idhān ittaṣal binā 'aqala al-ma'qulāt allatī hāhunā, wa idhān fāraqanā 'aqala dhātahu*).

A related statement is found elsewhere in the *Long Commentary* (442, 19:72–76), where Averroes says that the Agent Intellect sometimes acts on "things existing here", and sometimes does not, even as the material intellect sometimes judges such things and sometimes does not. Yet (at *LC* 444, 20:19) Averroes follows Aristotle in *De an*. III.5, 430a22 to affirm that the Agent Intellect does *not* sometimes "understand" (intelligit) and sometimes does not, i.e., it is always in act, its act being thinking, or understanding. Thus, the intermittent action it is said to perform on sensible forms cannot originate with it, even as the judgment that the material intellect passes on imaginative intentions is not a sometimes thing of its own creation.

We learn from all this that for Averroes, the Agent Intellect, like God, is always thinking the (sub lunar) world, and as such endowing it constantly with its intelligibility. When a person encounters a potentially intelligible sensible object, the realization of its intelligibility is such that it appears the Agent Intellect is acting just on that particular thing. The apparent "intermittence" of its activity is really due to the occasional attention we give to thinking universal thoughts, bringing them (with the ever present assistance of the Agent Intellect) from potentiality to actuality.

The material intellect too does not function in an inconstant manner, though it is not always in act; it is, however, always in potentiality, and when confronted with an intelligible intention its natural function should be to receive it, and then to judge its credibility. However, the material intellect, responding to and thus involved with the sensations that occur to a person, is subject to our will, which may not wish to have every intelligible idea that is encountered judged.

Averroes' Long Commentary discussion of the nature of the material intellect, as it morphs into the cogitative faculty, speculative intellect and acquired intellect – a development that he does not discuss much at all in the Middle Commentary – leaves a number of hard questions that he is fully aware of and which he tries to resolve. He is particularly troubled by the nature of the speculative intellect, as he understands it, that aspect of the material intellect which perishes, though it becomes the universal intelligibles that are its object and as such is one in number (*LC* 392, 5:1, 158).

For Averroes, the speculative intellect, and the particular set of intelligibles that it comprises, will indeed not endure as such (even as the individualized aspect of the material intellect will not); they are generated in a person and terminate at his/her death. Yet the universals with which the speculative intellect deals, and the material intellect which enables reception of these universal intelligibles, as the Agent Intellect which endows them, are all eternal, part of the formal stratum of being that is not dependent on our cognition of them. The intelligibles that constitute the

speculative intellect are each universal notions and as such one in number. Taken together they comprise (to whatever degree of totality attained) part of the unified and universal dimension of that (sub-lunar) intelligible reality which in its totality is represented by the one Agent Intellect. The material intellect is another part of that intelligible, unified world, one in number, as is every universal being in it.

Averroes immediately offers objections to this position (objections that were to be echoed by his critics later), inasmuch it eliminates intellectual individuality, besides assuming the eternity of the intellect, one in number for all people. He adopts a two-subject approach, a two-tier structure for the intelligible and formal stratum of being (*LC* 400, 5:385–390). As related to a physical substance and its particular, "material" forms, a potentially intelligible form is generated and passes away with its material subject. When, though, its intelligibility is realized by being thought, i.e. when received by a material intellect, the universal and eternal nature of this intelligible is comprehended.

The intelligibles of the speculative intellect, being part of the intellect, a third part as it were, are likewise one in number, and as eternal. Or, as Averroes says, the speculative intellect is eternal in one way, but generable and corruptible in another way (*LC* 406, 5:573). This latter way is due to the subject "by virtue of which the intelligible is true",[20] i.e., due to the generable nature of the sensory and imaginative forms from which the intelligibles emerge; which particular intelligibles perish with the perishing of the sensible objects.

Averroes thus sees this connection with particular and individual sensory and imaginative forms, the external subject of the speculative intellect, as a sufficient reason for positing both a hylomorphic reality that is not eternal in its instantiations, and an intelligible reality that is divisible and not one in number. Actually, though, the intelligible reality is divisible as long as it is not intelligible in actuality; concealed, as it were, within the intentions of the senses and imagination. Once received and absorbed into the intellect, the speculative intelligibles lose their individual moorings, and become one in number.

The conclusion of this is that Averroes has not succeeded in dispelling the notion that all perfected intellects are one in number; it is only the imperfect state of an individual's mind, the degree of its retention of corruptible sensory and imaginative forms without realization of their intelligible intentions, that accounts for the difference in personal identities. When one person knows a universal truth the other person may not, but when they both do, they may be said in this respect to have the same intellect.

The soul, Averroes concludes, has two kinds of being, mortal and "non-mortal"; a view, as he says, that the Ancients defended and that all Muslim religious codes uphold: *Et hoc apologizaverunt Antiqui, et in representatione illius conveniunt omnes leges* (*LC* 409, 5:652, with *leges* the equivalent of the plural form of the Arabic term *shari'ah*).

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[20] In contrast to the subject "in virtue of which the intelligible is an existing being", which subject is the Agent Intellect. Cf. Ivry (1966), 81; Blaustein (1984), 63.

This is one of the few places in the Long Commentary that Averroes invokes the authority of his religious tradition in support of his position. It is doubtless due to the sensitive nature of the topic that he does so. Yet though he asserts the immortal nature of part of the soul, it is not the individual soul that endures as such in his scheme, neither as presented here or elsewhere, and that is the Achilles heel of his position on immortality, *vis-à-vis* al-Ghazālī and others of his critics. Vulnerable as he is to theological attacks, Averroes' theory of perception is admirably bold and comprehensive.

Acknowledgments This paper is dedicated in friendship to Gerhard Endress on the occasion of his retirement, in appreciation of the outstanding contribution he has made to the understanding of Islamic philosophy in general, and to Averroes in particular. A version of this paper was read at the Symposium on "Der Arabische Aristoteles" held in Ruhr-Universität Bochum in February 2005.

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Robert Kilwardby on Sense Perception

José Filipe Silva

1 Introduction

My aim in this paper is to analyse Robert Kilwardby's conception of sense-perception in his work *De spiritu fantastico*.[1] I'll particularly focus on the distinction between corporeal and incorporeal sensitive spirit and the organ of the common sense, paying attention to four main ideas in Kilwardby's theory of sense-perception: there is no knowledge of sensible objects prior to the use of senses, the activity of the incorporeal sensitive spirit is the cause of perception, the process of sense-perception implies a clear separation of the immaterial and material (or corporeal) elements involved in perception, and finally the conciliatory attitude towards the theories of Aristotle and Augustine.

In an article published in 1926, Chenu attributed the work *De spiritu ymaginativo* to the Provincial of England (1261–72) and later Archbishop of Canterbury (1972–78) Robert Kilwardby.[2] He also established as a probable date of composition the period after Kilwardby's admittance to the Dominican Order, during his teaching in Oxford from 1250 to 1261. In an article of 1984, Lewry confirmed this same period of composition.[3] According to him the knowledge of Augustine shown in this text by Kilwardby is not compatible with the writings from the time when Kilwardby was a Master of Arts in Paris (between 1237 and 40/5).[4]

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[1] Robert Kilwardby O.P., *De Spiritu Fantastico*, ed. P.O. Lewry, Auctores Britannici Medii Aevi, IX.1 (Oxford: Oxford University Press, 1987). The work has been translated by A. Broadie in Robert Kilwardby O.P., *On Time and Imagination*, Auctores Britannici Medii Aevi, IX.2 (Oxford: Oxford University Press, 1993).

[2] M.-D. Chenu, "Le 'De Spiritu Imaginativo' de R. Kilwardby, O. P.", in *Revue des Sciences Philosophiques et Théologiques* 15 (1926), 507–517.

[3] P.O. Lewry, "Robert Kilwardby on Imagination: The Reconciliation of Aristotle and Augustine", *Medioevo* IX (1983), 12–18 [especially 16–17].

[4] E. M. F. Sommer-Seckendorff, *Studies in the Life of Robert Kilwardby, O. P.*, Dissertationes Historicae: VII (Rome: Institutum Historicum Fratrum Praedicatorum S. Sabinae, 1937), 2 and

S. Knuuttila, P. Kärkkäinen (eds.), *Theories of Perception in Medieval and Early Modern Philosophy,*

The *De spiritu fantastico* is divided into four major questions. Has the sensitive spirit images of sensible objects before the use of the senses or does it acquire these through the use of the senses? How does this acquisition take place? How do the images of sensible objects in the particular senses reach the common sense and thence arrive at the imagination? Which is the organ of the common sense? In addition there are seven *dubitationes* concerning the common theme of the imaginative seeing. The three first questions can be characterised as the question of what is the origin of the knowledge of sensible objects?

To Kilwardby, all knowledge of sensible things comes from the senses,[5] i.e., there are no images of objects in the soul before the use of the senses.[6] The essential problem is then how to conciliate the positions of Augustine and Aristotle on sense-perception. According to Augustine, the soul possesses before sensation some knowledge of the sensible objects – *in* itself (*in semetipsa*) and *from* itself (*de semetipsa*).[7] By opposition, Aristotle argues that all knowledge about sensible objects must come through the use of the senses, i.e. the soul is completely empty before sensation.[8]

Kilwardby's conciliatory answer is that the senses are the origin of sensible knowledge but the soul is not merely a passive receptor of impressions. Perceptions involve an attentive activity of the soul, the immediate awareness of the affection

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W.A. Hinnebusch, *The Early English Friars Preachers,* Dissertationes Historicae: XIV (Rome: Institutum Historicum Fratrum Praedicatorum S. Sabinae, 1951), 375.

[5] *De spiritu fantastico*, 6 (57.2–4); 8 (57.17–18). The first number refers to the paragraph, followed by the page(s) and the line(s). Broadie's translation is referred to by page(s). Broadie always translates *spiritus* with "soul". I think that the proper term is "spirit".

[6] "Estimo enim partem anime fantasticam sive ymaginariam omnimo nudam esse ab ymaginibus corporalium rerum donec homo usus fuerit sensibus." *De spiritu fantastico*, 23 (59.35–60.2). ("For I think that the imaginative part of the mind entirely lacks images of corporeal things until a man uses his senses." *On Imagination*, 75).

[7] "Item, si spiritus sensitiuus in se formaret ymagines sensibilium, tunc aut faceret eas de nichilo, aut de aliquo. (. . .) Et quod de se formet illam, concordare uidetur cum uerbo Augustini I0 libro *De Trinitate* superius allegato, ubi dixit quod mens *conuoluit* et *rapit* ymagines corporum *factas in semetipsa de semetipsa*." *De spiritu fantastico*, 80 (72.21–28). ("Moreover, if the sensory soul were to form in itself images of sensible things, then it would make them either from nothing or from something. (. . .) And that the soul forms a mental image from itself seems to accord with Augustine's words quoted above, where he said that mind collects and grasps images of bodies, images made in itself from itself." *On Imagination*, 89). Also "Item, posset dici quod dicit Augustinus anima uel mens facit in semetipsa et de semetipsa similitudines corporum", *De spiritu fantastico*, 134 (86.8–9). (cf. Augustine, *De Trinitate*, ed. W.J. Mountain and F. Glorie, Corpus Christianorum, Series Latina 50 (Turnhout: Brepols, 1968), IX.3).

[8] "Ibi enim vult intelligibilium species semper animae esse praesentes quae sunt perpetuae et immutabiles, et spectant ad visionem intellectualem, sed corporalium imagines quae spectant ad visionem spiritualem nullo modo animam habere posse nisi per usum sensuum corporalium." *Quaestiones in Librum Primum Sententiarum*, ed. J. Schneider (München: Verlag der Bayerischen Akademie der Wissenschaften, 1986), 62.1, 46–49 (178); "Ymagines uero sensibilium et corporalium rerum non perueniunt ad fantasiam ut uideantur ymaginaria uisione nisi mediante uisione corporali." *De spiritu fantastico*, 25 (60.29–30). ("Images of sensible and corporeal things do not reach the imagination in such a way as to be seen by an imaginative vision except by means of a corporeal vision." *On imagination*, 76).

of the sense organ by the sense object. The simultaneity of this affection and the awareness of it allows Kilwardby to interpret the soul as responsible for sense-perception.

Having put forward the main lines of his interpretation of Augustine's and Aristotle's theories about the origin of sensation, Kilwardby then concentrates on the question about the passage of the species from the organs of senses and the organ of the common sense. This is explained by distinguishing between the incorporeal vivifying sensitive spirit and the corporeal vivified sensitive spirit.[9] This corporeal spirit is made of subtle materials such as fire and air, so subtle that it is almost invisible.[10] The corporeal spirit is divided into the vital spirit (originating in the heart) and animal spirit (the vital spirit purified in the brain)[11] and it is spread in the body through a neural system, as in Avicenna.[12] The corporeal sensitive spirit works as an instrument of the soul to vitalize the body.[13]

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[9] "Ex hiis patet quod duplex est spiritus in animali: unus corporeus qui movetur et vivificatur; alius incorporeus qui movet et vivificat." *De spiritu fantastico*, 182 (97.17–18). ("From these points it is obvious that there are two souls in an animal. There is a corporeal soul which is moved and is vitalized, and there is another, incorporeal which causes motion and vitalizes." *On Imagination*, 116).

[10] "Si quis requirit hic cuiusmodi corpus est iste spiritus qui est per se et primum instrumentum animae, "dicendum" quod sit corpus compositum ex quattuor elementis ita quod ex subtilissimis eorum partibus et summe defecatis, adeo ut non sit iste spiritus corpus per se uisibile." *De spiritu fantastico*, 174 (95.31–34); see also 176, 179, 180. ("If someone enquires here about the kind of body that this soul is which is essentially and primarily that organ of the mind, it should be said that it is a body composed of the four elements in their most subtle parts and most finely strained so that this soul is essentially not a visible body." *On Imagination*, 114.) Cf. Alcher of Clairvaux (?), *De spiritu et anima*, Patrologia latina, ed. J.-P. Migne, 40, I.33, 802–803; also Hugh of St. Victor's *De unione spiritus et corporis*, 37–55, ed. in A.M. Piazzoni, "Il 'De unione spiritus et corporis' di Ugo di San Vittore", *Studi Medievali* 21 (1980), 884–885.

[11] "Hec quoque hic adiciendum est quod cum medici distinguant spiritum corporeum per uitalem et animalem, quorum secundum eos uitalis generatur in corde et est adhunc ineptus ad sensitificandum corpus et ad mouendum secundum quod huiusmodi, set animalis generatur in cerebro de uitali et ex tunc operatur spiritus sensum et motum, potest eciam istud aptari premisse sententie Aristotilis." *De spiritu fantastico*, 270 (119.1–6). ("It should also be added here that since doctors divide the corporeal soul into the vital and the animal, of which, according to them, the vital is produced in the heart and as such is incapable of producing in the body either sensation or motion which follows from sensation, whereas the animal corporeal soul is produced in the brain from the vital soul and from then the soul activates sense and motion, this also can be accommodated to the foregoing judgement of Aristotle's." *On Imagination*, 137–138).

[12] "Notandum igitur quod secundum auctores qui de illis loquuntur, animal sentit per quosdam neruos continentes spiritum quamdam corporalem ualde, qui est immediatum instrumentum anime." *De spiritu fantastico*, 168 (94.13–16). ("It should therefore be noted that according to the authorities who speak about these matters an animal senses by means of certain nerves which contain a very subtle corporeal soul, which is the immediate organ of the mind." *On Imagination*, 113). See G. Verbeke, "Science de l'âme et perception sensible", in Avicenna, *Liber de Anima seu Sextus de Naturalibus* I-III, ed. S. van Riet (Louvain, Leiden: Peeters, Brill, 1972), 61–62.

[13] "Ex hiis patet quod 'instrumentum sensus' dupliciter accipi potest. Tamen quod per se et primo tale est, *corpus quoddam subtile est*, per quod anima vivificat et movet corpus *et sensificat*", *De spiritu fantastico*, 173 (95.23–25). ("It is obvious from these points that 'organ of sense' can be

Kilwardby seems to think that the soul, owing to its immaterial nature, cannot act directly upon the corporeal spirit.[14] It is necessary, then, that there is a mediating spirit which vitalizes the corporeal spirit. This is the incorporeal sensitive spirit.[15] The corporeal spirit receives the species of sensible things and then the soul reacts to these.[16]

2 Sensitive Spirit

Kilwardby distinguishes between two levels of the soul (*anima*): one superior (*mens*) and the other inferior (*spiritus*).[17] *Spiritus* can, though, be used to refer to the soul as a totality or to any of its parts, the superior and the inferior. This usage can be found in Augustine for example in his *De genesi ad litteram libri duodecim* and in pseudo-Augustine's *De spiritu et anima*.[18]

Kilwardby also distinguishes between the two parts of the soul responsible for knowledge, the sensory or imaginative and the intellectual (*dues partes anime cognitive, scilicet sensualis et intellectualis*).[19] The sensory part which we have in common with animals is called *spiritus sensitivus.* The *spiritus sensitivus* is responsible for the sense-perception and for the appetitive movement.[20]

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taken in two ways. However, what is essentially and primarily is a subtle body by means of which the mind vitalizes and moves the body and produces acts of sensing." *On Imagination*, 114).

[14] "Et hoc est quia dictorum extremorum [*mens*, *spiritus sentitivus*, *organum sensitivum*] tanta est distantia in spiritualitate et corporalitate quod non sunt nata coniungi ad cognicionem faciendam et suscipiendam nisi per dicta media." *De spiritu fantastico*, 140 (88.4–7). ("And that is because, in respect of spirituality and corporeality, there is so great a distance between the aforementioned extremes that the extremes are not naturally fitted to be united so as to produce and receive a cognition except via the media." *On Imagination*, 106).

[15] "Sicut ergo spiritus sensitiuus indiget organo et eciam exteriori medio inter se et sensibile extra, sic mens indiget spiritu ymaginativo et sensitiuo inter se et organum sensitiuum." *De spiritu fantastico*, 140 (88.2–4). ("Therefore just as the sensory soul needs an organ and needs also an outside medium between itself and the sensible thing outside, so also the mind needs an imaginative act and a sensory soul between itself and the sense organ." *On Imagination*, 106); "... spiritus uiuificans qui mouet et animat ipsum spiritum corporeum", *De spiritu fantastico*, 193 (101.15–16). ("... the vitalizing soul which moves and animates the corporeal soul", *On Imagination*, 120). The incorporeal spirit does not operate the same way in men and animals. Cf. *De spiritu fantastico*, 44, 139, 140.

[16] *De spiritu fantastico*, 168 (94.16–17).

[17] *De spiritu fantastico*, 1 (55.5–6).

[18] Augustine, *De Genesi ad litteram libri duodecim*, ed. J. Zycha, *Corpus Scriptorum Ecclesiasticorum Latinorum* 28 (Vienna, Prague: F. Tempsky; Leipzig: G. Freytag, 1894), XII, 9 and Alcher of Clairvaux (?), *De spiritu et anima*, PL 40, 783. Cf. Lewry (1983), 16–7.

[19] *De spiritu fantastico*, 87 (74).

[20] *De spiritu fantastico*, 99 (75.34).

The sensitive spirit organizes, unites and preserves the living body by a continuous influence on it (*operatur sic influendo in corpori*).[21] It pays permanent attention to the sense organs[22] (*spiritus sensitiuus attentus in omnibus que instrumento accidunt*) which are the instruments of sensing.[23] When the organ of sense is affected by an exterior object, the incorporeal sensitive spirit must move the sense organ according to the ways this has been affected. This movement is explained by the necessity of protecting the sense organ that can be injured and destroyed, by the excess of light for instance.[24] During this motion, the incorporeal sensitive spirit makes itself similar to what was impressed on the sense organ (*informatio*) and forms an image of the impression of the object which affected the sense organ.[25] At the same moment the incorporeal sensitive spirit turns its attention upon itself to see in itself the image which it has formed in itself. [26]

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[21] "Ut autem intelligatur eius sententia, nota quod spiritus sensitiuus, eo quod forma est, continue operatur et agit influendo in corpus quod est materia, et hoc continendo, uniendo, saluando et ordinando illud", *De spiritu fantastico*, 99 (75.32–34). ("In order to understand (Augustine's) judgement note that because the sensitive soul is a form it works and acts continuously by flowing into the body which is matter in relation to it, and holding together, uniting, and preserving the body", *On Imagination*, 92).

[22] "Totum autem hoc prouenit ex appetitu et attencione naturali ipsius spiritus quibus curat de salute et incolumitate et conservacione corporis. Et hic appetitus saluandi corpus et attencio siue sollicitudo circa hoc spiritui inditi sunt", *De spiritu fantastico*, 101 (76.22–4). ("But all this stems from the natural desire and attention of the soul by which it takes care of the well-being, safety, and preservation of the body. And this desire to see to the health of the body, and the attention or solicitude regarding the body, are endowments of the soul", *On Imagination*, 93).

[23] *De spiritu fantastico*, 102 (76.35).

[24] "Cum anima diversimode moueat suum corpus secundum diuersitatem passionem eius, diversimode tunc mouebit spiritus sensitiuus instrumentum sensitiuum secundum quod illud diuersimode afficitur." *De spiritu fantastico*, 100 (76.12–15). ("Since the mind moves its body in different ways corresponding to the diversity of passivities in the body, the sensory soul will therefore move the sense organ in different ways corresponding to the different ways in which the organ is affected." *On Imagination*, 93); "Et sicut continue operatur sic influendo corpori, sic diversimode operatur secundum diuersas affectiones uel passiones corporis." *De spiritu fantastico*, 99 (75.4–6). ("And just as it acts continuously by flowing into the body, so it acts in different ways in respect of the different affections or passivities of the body." *On Imagination*, 92).

[25] "Cum primo tangitur spiritus corporeus uiuificatus a specie sensibili sibi intromissa in extremo sui respiciente exterius, statim, in eodem instanti occurens, spiritus sensitiuus uiuificans passioni corporis conuoluit se cum illa et in se format speciem similem." *De spiritu fantastico*, 185 (98.13–17). ("When the vitalized corporeal soul is first touched by a sensible species transmitted to it at the extreme of the soul which faces outward, then at the very same instant the vitalizing sensory soul co-mingles with a passivity of the body and forms in itself a similar species." *On Imagination*, 117); ". . . anima penetrans et regens corpus atque se cum specie reperta ibi conuoluens, sibi speciem imprimit per illam cum qua se conuoluit." *De spiritu fantastico*, 121 (82.17–19). (". . . the mind itself, penetrating and governing the body and co-mingling itself with the species found within it, impresses the species on itself by means of the species with which it co-mingles itself." *On Imagination*, 99).

[26] "sic enim spiritus sensitiuus se convertendo attentius ad suum organum specie sensibili informatum facit se ei similem, et in se propriam aciem reflectendo uidet se talem." *De spiritu fantastico*, 103 (77.28–31). ("For in this way the sensory soul, by turning itself more attentively to its sense

We can identify three moments in Kilwardby's process of sense-perception. First is the action of the sensible object which impresses the sensible species on the sense organ.[27] Second, the incorporeal sensitive spirit, paying permanent attention to the body, makes itself similar (*facit se ei similem*) to the image present in the sensitive corporeal spirit.[28] Third, the incorporeal sensitive spirit, looking to itself (*in se aciem reflectendo*) is aware of the sensible object through the likeness which it has made in itself.[29] Kilwardby does not argue that the external species are somehow absorbed, but that the incorporeal sensitive spirit is able to become similar (through "likeness"/*similitudo*) to the corporeal species. Perception does not take place by the species received by the sense organ but by the perception of the incorporeal sensitive spirit of its own action, looking to itself as being similar to that image.[30] The exterior object is seen by means of the interior image.[31] Kilwardby is influenced by Augustine's theory of the physiological mechanism of sensation, where the material spirit in the nerves is associated with the immaterial part of perception.[32] This immaterial part of the process is responsible for the awareness of

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organ which has been informed by a sensible species, makes itself like the species, and by turning its eye upon itself it sees that it is like the species." *On Imagination*, 94).

[27] "Et hec non est nisi impressio similitudinis obiecto in ipso organo facta." *De spiritu fantastico*, 103 (77.21–22). ("And this is just the impression, made in the sense organ itself, of a likeness of the object." *On Imagination*, 94). See also *On Imagination*, 96–97.

[28] "Quando enim anima occurrit actione passioni corporis, mouet corpus et se applicat uel conuoluit cum ymagine qua passum est corpus, et per huiusmodi motum aquirit sibi similitudinem rei sensibilis." *De spiritu fantastico*, 166 (93.29–31). ("For when the mind goes forward by its act to meet a passivity of the body, the body moves and joins itself to, or interwines itself with the image by which the body has been acted upon, and by such motion it acquires for itself a likeness of the sensible thing." *On Imagination*, 112).

[29] "Et hoc est sentire in se ymaginem quam in se formauit attencius in corpus operando." *De spiritu fantastico*, 103 (77.24–5). ("And that is to sense in itself the image which it has formed in itself by acting more attentively upon the body." *On Imagination*, 94).

[30] "Nec discernit ymaginem ab ymagine, scilicet illam quam fecit sensibile in organo et quam ipse in se conuoluendo se cum ymagine inuenta in organo. Tamen, cum sint coniuncte et simul, ut ita dicam, conuolute uel applicite, per illam que formata est in spiritu uidetur illa que formata est in organo, utraque tamen sentitur et simul, sed exterior per interiorem." *De spiritu fantastico*, 104 (78.5–10). ("But it does not distinguish one image from the other, that is, the image which the sensible thing made in the sense organ, and the image which the soul itself made when co-mingling with the image which is in the sense organ. However, since they are together and simultaneous, as I say, rolled together or conjoined, the one which is formed in the organ is seen or sensed by means of the one which is formed in the soul, though they are sensed simultaneously; but the outer one by means of the inner one." *On Imagination*, 95). The two images are simultaneous. While the one present in the organ disappears when the object no longer affects it, the other remains in memory.

[31] "Et sic sentit sensibile forinsecum per ymaginem quam in se formauit." *De spiritu fantastico*, 103 (77.31–32). ("And thus it senses the sensible object outside by means of the image which it has formed in itself." *On Imagination*, 94).

[32] "Augustine suggests that the soul, as agent of sensation, activates the force of sentience through a fine corporeal medium (*per subtilius corpus*)." in G. O'Daly, *Augustine's Philosophy of Mind* (London: Duckworth, 1987), 82.

physiological changes and the active attention (*intentio*, *attentio*) of the soul reacting to those changes.[33]

The standard Aristotelian view is that the sensible form is received without matter in perception. Sense-perception is a passive process in which the subject of perception receives the form from the object. According to Kilwardby, the affection of the sense-organ is passive, but sense-perception itself is not a passive process. Perception is not the reception of a sensible form by the sensitive power. The image of the sensible object is produced by the sensitive incorporeal spirit, which runs counter to the affection of the body by the sensory stimulus. It is produced because all the knowledge of sensible objects comes through the use of senses. The sensitive spirit is empty of images prior to the use of senses, and an external object is a necessary condition for sense-perception. In Kilwardby's dualistic theory, the sense organs and the corporeal sensitive spirit are affected by the exterior object, but the material object does not affect the incorporeal sensitive spirit. This incorporeal sensitive spirit does not receive any form; it produces the image of the object by itself.

A problem arises here however. It seems that the image made by the incorporeal sensitive spirit (through which the object is perceived) is posterior to the reception of the sensible species by the sense organ. But if it is posterior, how is it the principle of sensitive knowledge? Kilwardby argues that the image produced by the incorporeal sensitive spirit is simultaneous to the affection of the sense organ.[34] The action of the sensible object (*actio rei sensibilis*) affecting the sense organ is just the necessary occasion, or *causa efficiens per accidens*, for perception.[35] The attention of the soul, as well as its capacity for making itself similar to the species, is the *causa efficiens per se* of perception.[36]

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[33] "The body soul interaction in perception is a kind of blending or mixing (. . .) The mental counterpart of this process is called concentration (*intentio*, *attentio*)" in G. O'Daly, "The Response to Scepticism and the Mechanisms of Cognition", in L. Stump and N. Kretzmann (eds.), *The Cambridge Companion to Augustine* (Cambridge: Cambridge University Press, 2001), 165–166. "*Intentio* is an *activity*: Augustine will give particular emphasis to the active nature of perception. We have seen that he can describe sensation as a counter motion to that of the sensory stimulus. (. . .) The awareness of such activity or motion in the soul is precisely the Augustinian definition of perception." in O'Daly (1987), 85–86.

[34] See footnote 30 above.

[35] "Est autem ymago in organo uel organum ymagine formatum causa sine qua non fieret ymago in spiritu sentiente, set causa eius effectiva non est." *De spiritu fantastico*, 103 (77.32–4). ("The image in the organ, or the organ informed by the image, is a necessary condition of the image coming to exist in the sentient soul. But it is not the efficient cause", *On Imagination*, 94). Cf. *De spiritu fantastico*, 117 (80.32–81.3); 123 (83.2–5).

[36] "Similiter anima occurrens passionibus corporis per se causa cognicionis est, sensibilia et organum sensitiuum accidentalis sicut instrumentum uel instrumenta quibus utitur anima ad sui informacionem." *De spiritu fantastico*, 123 (82.34–36). ("Likewise, the mind going out to meet the passivities of the body is essentially the cause of cognition; the sensible things and the sense organ are an accidental cause like an instrument or instruments used by the mind in order to become informed." *On Imagination*, 100).

As for the incorporeal sensitive spirit, Kilwardby argues that its two operations, forming and sensing,[37] are temporally simultaneous, that is to say, perception as reflective attention occurs at the same time as the formation of the image.[38] Even though these are temporally simultaneous, from the point of view of natural order, forming is previous to sensing, since we can only perceive through an image.[39] When the incorporeal sensitive spirit produces the image "before" sensing, i.e. turning itself towards this image, the forming of the image does not take place accidentally but is naturally led by "natural instinct" (*instinctu naturali ducitur*) and "directed by superior causes" (*superioribus causis*).[40] The certainty of sensible knowledge is justified by the soul's divine origin and guaranteed by the power of God.[41]

Kilwardby interprets Aristotle's statement that the object is the cause of the actualisation of sensation[42] as *only* referring to the action upon the sense organ and not as implying the passivity of the power of sensing (*spiritus sensitivus*).[43] Although the object affects the organ of sense (body), it does not affect the soul;[44] on the contrary, it is the soul that acts upon the body.[45] The soul is not affected in any way

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[37] The two operations of the incorporeal sensitive spirit are the "attenta actio anime erga corpus, per quam et in qua formatur in illa ymago, et conversio aciei in se, per quam et in quam sentitur ymago" (*De spiritu fantastico*, 125, 83). See also *De spiritu fantastico*, 126 (83.33–35): "Non enim fiunt formatio et apprehensio simul natura, quamvis simul tempore, set prius natura formatur et posterius natura apprehenditur in eodem instanti."

[38] "Si primo modo, dicendum quod spiritus format in se ymaginem, sentiens quid facit, idest dum sentit, quia in eodem instanti formatur et sentitur." *De spiritu fantastico*, 126 (83.29–31).

[39] "Si secundo modo, tunc dicendum quod spiritus format in se ymaginem, nondum sentiens eam, quia nondum conuertit aciem ad illam." *De spiritu fantastico*, 127 (83.38–39).

[40] *De spiritu fantastico*, 128 (84.22–23).

[41] "Above that power blessed rational souls transmit the very law of God, without which no leaf falls from a tree, and by which our hairs are counted without nature being interposed." *On Imagination*, 102.

[42] "Et ita spiritus sentiens secundum ipsum uidetur informari ymagine rei sensibilis per actionem et influentiam corporis sensibilis, licet per aliqua media." *De spiritu sensitivo*, 69 (70.23–30). ("And so the sentient soul, according to Aristotle, seems to be informed by an image of a sensible thing by means of the action and influence of the sensible body, though this is done through a medium." *On Imagination*, 87). See also *De spiritu fantastico*, 70 (70.31–33).

[43] "Quod ergo dicit Aristotiles quod *sensus est susceptiuus specierum sensibilium sine materia*, de organo sensitiuo dicitur." *De spiritu fantastico*, 112 (79.36–80.2). ("Thus Aristotle's words: 'Sense receives sensible species without matter', are about the sense organ." *On Imagination*, 97).

[44] "Item, in 6 *De musica*, capitulo I4, ubi declarat quomodo anima non patitur a corpore, set omnino facit in illo et de illo (. . .) Ex hiis omnibus constat Augustinum intedere quod spiritus sensitivus dum sentit non recipit ymagines sensibilium a corpore tanquam patiens ab agente." *De spiritu fantastico*, 54 (67.6–16). ("Moreover, where Augustine explains in that way a mind is not acted upon by a body but on the contrary acts upon it and with regard to it (. . .) From all these points it is plain that Augustine means that when the sensory soul senses it does not receive images of sensible things from a body as a passive thing receives things from an agent." *On Imagination*, 83).

[45] "In quo, ut iam patet, patitur corpus ab alio corpore et non agit in spiritum, set spiritus eius passioni occurrit agens."*De spiritu fantastico*, 102 (77.2–3). ("In this, as is already clear, the body is acted upon by another body and does not act upon the soul, but the active soul goes out towards the passivity of the body." *On Imagination*, 93).

either by the body or the object, indicating that sense-perception is not a passive process.[46] Aristotle's and Augustine's theories on sense-perception are not therefore in opposition to each other.[47]

3 Memory, Imagination and Common Sense

According to Kilwardby, memory is the lowest part of the incorporeal spirit (*est infimum spiritus incorporei*), through which the incorporeal soul is conjoined (*coniungat*) with the corporeal soul.[48] In this sense it is the first to react to the changes of the corporeal spirit, as in perceiving.[49] Memory is the power of the sensitive spirit which has the function of becoming similar to the sensible things, to preserve this assimilation and to display this to the soul which turns to itself even when the external entities are not present.[50] This last function of memory is imagination,

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[46] "Set in mundo maiori ita est quod natura inferioris existentie omnino regitur et patitur a natura superioris existentie et non agit in illam. (. . .) Igitur sic erit in homine, ubi corpus est inferioris existentie quam anima et organum sensitivum quam spiritus ipsum animans." *De spiritu fantastico*, 56 (67.28–68.5). ("But in the greater world the situation is such that a nature that has a lower existence is entirely governed and acted upon by a nature that has a higher one, and does not act upon that higher existence. (. . .) Therefore this is how it will be in man, where the body has a lower existence than the mind has, and the sense organ has a lower existence than has the soul which vivifies that organ." *On Imagination*, 84).

[47] "Et sic est intelligenda doctrina phisica de modo sentiendi, et tunc [Aristotle] concordabit cum Augustino" *De spiritu fantastico*, 113 (80.14–15). ("It is in this way that one should understand the physical doctrine concerning the way sensing occurs, and then Aristotle's doctrine will accord with Augustine's." *On Imagination*, 97). See also *De spiritu fantastico*, 103 (77.12–13): "Ex hiis patet quid est sentire secundum Augustinum, et quomodo fiat, et quomodo eciam sit coniuncti secundum Aristotilem."

[48] "Memoria enim, quantum michi uidetur, est infimum spiritus incorporei quo coniungitur cum spiritu corporeo, quod et primum suscipit huiusmodi passiones a spiritu corporeo, et eas reddit in se conuerse." *De spiritu fantastico*, 217 (108.18–21). ("For memory, so far as I can see, is the lowest part of the incorporeal soul, and it is by the memory that the incorporeal soul is conjoined with the corporeal, and it is that lowest part that first receives such passivities from the corporeal soul and makes them appear to the eye turned upon itself." *On Imagination*, 127).

[49] "Sic ergo memoria recipit per assimilationem ad illud cui naturaliter copulatur." *Quaestiones in Primum Librum Sententiarum,* 62.1, 142–143 (181).

[50] "spiritus sensitiuus uiuificans sic conditus est ut ex sui natura sit assimilabilis rebus sensibilibus. Et huius assimilacionis sit conseruatiuus et sibi ipsi contemplanti se indicatiuus. Et hec est eius potentia que talis est, memoria est." *De spiritu fantastico*, 206 (105.3–7). ("It should be said that the vitalizing sensory soul was so made in order that by its nature it (i) should be assimilable to sensible things, (ii) should preserve this assimilation and (iii) should show the assimilation to itself while contemplating itself. And this power which it has, which is of such a kind, is memory." *On Imagination*, 124). "Ipsa enim potentia spiritus sensitiui qua se assimilat rebus sensibilibus extra, cum de extra reportauerit ymaginem sensibilem et retinuerit, alias proprie aciei indicandam in absentia rei sensibilis extra, recte dicitur 'memoria'." *De spiritu fantastico*, 206 (105.7–10). On the role of memory in Augustine (influential for Kilwardby), see O'Daly (1987), 87–88; 131–138.

the power of becoming aware of things kept in the memory.[51] Imagination is distinct from sense since it only functions in the absence of the sensible thing.[52] Imagination depends on those images of sensible objects which are displayed by memory and whose original source is the senses. From these images, imagination is able to compose other images, for instance of non-existent objects, but these images must proceed from the senses because "if nothing similar was apprehended by the senses it cannot be imagined."[53]

Imagination is the power intermediate between senses and intellect, acquiring images from both and giving to the intellect images of corporeal things.[54] The images acquired are different in accordance with their origin. From the intellect, imagination receives images of intelligible and spiritual things. These intelligibles exist in the intellect directly.[55] From the senses it receives images of sensible and corporeal things.[56]

Memory guarantees the possibility of knowledge of the soul separated from the body. Kilwardby argues that the soul is able to imagine even without being able to use the soul's immediate instrument, the corporeal spirit.[57] This is not based on any illumination or any other supernatural device. The soul which is separated from the body can operate with the images of sensible things stored in the memory which exhibits these images to the imagination.[58]

The close relation between memory and imagination is also present in the appetitive movement. The soul avoids or pursues things unpleasant or pleasant to itself, which demands a movement of the body. The appetitive movement is explained by an act of imagination, selecting the objects of desire from images of sensible

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[51] "Ymaginacio autem sine memoria esse non potest, quia ymaginacio est rei sensibilis absentis ymaginis intra per memoriam representate contemplatio." *De spiritu fantastico*, 207 (105.19–21). ("There can be no imagination without memory, since imagination is the contemplation of the image of an absent sensible thing which is represented within by the memory." *On Imagination*, 124). The same meaning can be found in Aristotle's *On memory and reminiscence*, "For when one actually remembers, this impression is what he contemplates, and this is what he perceives." 1, 450b18; and also "memory (. . .) is the state of a presentation, related as a likeness to that of which it is a presentation." *idem*, 1, 451a15-6.

[52] "It should be said that the sense acts when the sensible thing is present, and the imagination when the thing is absent. Hence, when something has been grasped by sense and thereafter, in the absence of that thing outside, when the mind directs itself inward to imagining what had previously been sensed, by means of the image which had been left behind in it, then the imagination is being exercised. "*On Imagination*, 119 (par. 192); see also *On Imagination*, 107 (par. 143).

[53] *On Imagination*, 76 (par. 24).

[54] "For that consists of sensible things, and hence such things reach the intellectual soul by means of a corporeal and imaginative vision, and by no other means in nature." *On Imagination*, 76 (par. 25).

[55] *De spiritu fantastico*, 19 (59).

[56] *De spiritu fantastico*, 16 (63–64).

[57] "Ad septimam dicendum quod non est dubitandum, ut uidetur, quin spiritus ymaginatiuus hominis a corpore separatus possit excercere opus ymaginacionis per se sine spiritu corporis," *De spiritu fantastico*, 214 (107.24–25).

[58] The same idea can be found in Augustine's *Confessiones*: ". . .sicut aliquid, quod corpore tangendo sentitur quod etiam separatum a nobis imaginatur memoria." X.9.16.

things.[59] This actual imaginative act takes place in connection with memory and common sense.[60] The term "memory" in a large sense covers the functioning of memory as recollective power and sensation.[61] The functions of the common sense partially overlap with those of memory in the large sense.

The functions of the common sense are "the reception of all sensible things and the judgement concerning what is received,"[62] and to "know and distinguish all the individual sensible things [while still present]."[63] Common sense, as a moving power, is the primary power of an animal.[64] Kilwardby conciliates Aristotle, Augustine and the medical tradition by saying that the brain and the heart are *both* the organs of the common sense (*duplex principium sentiendi*[65] or *domicilia*).[66] The brain being its organ, the heart its source.[67] In the brain the common sense occupies one of the two ventricles in the front part of the brain,[68] the other being for

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[59] "Anima indiget pro sui salute prosequi sibi comoda, uel querere cum non sint praesentia, et fugere nociua et aduersa eciam antequam sint presentia. Sec hoc non potest nisi per motum processiuum. Motus autem talis non procedit nisi ex appetitu. Appetitus autem non est sine ymaginacione appetibilis uel fugibilis." *De spiritu fantastico*, 207 (105.14–19).

[60] "Common sense and imagination which are one power as regards their substance and which preside simultaneously in the brain and in the heart, produce the act of imagination completely in the brain; this act reaches the heart, and from there the desiderative power, which is not essentially different from sense and imagination, produces an impulse to move the animal; and the desiderative power follows that same impulse, made in the heart, through into a regular motion." *On Imagination*, 141; "Tunc enim mouetur animal appetendo quando actualiter ymaginatur rem appetibilem." *De spiritu fantastico*, 209 (105.28–29).

[61] The memory chamber, located in the rear part of the brain, helps the recollective power to remember more easily, even if the "images of the sensed things are not shut up in that chamber." (*On Imagination*, 122).

[62] "Cum hoc autem concomitatum est quod per organum fiat opus communis sensitiue, quod est omnia sensibilia recipere et de receptis iudicare." *De spiritu fantastico*, 280 (121.12–14).

[63] *On imagination*, 110. In Aristotle, the common sense, apart from making a unity from the common sensible determinations (such as movement, figure, etc.) that arise, undefined, to the several proper senses, performs the role of being the conscience of sensation, of "sensing the sensing". Cf. *De anima*, II.6.

[64] "Deinde, uirtus prima in animali, unde animal est, sensus communis est. Sensus enim est perfectio animalis inquantum animal", *De spiritu fantastico*, 254 (114.9–10).

[65] *De spiritu fantastico*, 271 (119.14–16). "Granted these things, it is obvious that there are two organs corresponding to the common sense to which images of sensible things come, and there are two sources of sensing from which the proper senses originate." *On Imagination*, 138.

[66] *De spiritu fantastico*, 280 (121.14).

[67] "Ex quibus videtur quod ipse attribuit sensum tam cerebro quam cordi: cerebro, tamen, magis sicut instrumento quam sicut principio; cordi, vero, magis sicut principio quam sicut instrumento." *De spiritu fantastico*, 266 (116.32–35). From the point of view of the apprehension, i.e., *sentit* and *ymaginatur*, the organ of the common sense is primarily the brain, because it is the more spiritual and peaceful organ. (*De spiritu fantastico*, 284 (122.16–18)). From the point of view of the desiderative power the heart is primarily that organ, since it is the source of the heat necessary to cause motion (*De spiritu fantastico*, 285 (122.29–35)).

[68] Kilwardby's theory of ventricles is based in Costa ben Luca's *De differentia spiritus et animae*, Pseudo-Augustine's *De spiritu et anima* and also Augustine's *De genesi ad litteram*, VII.18.24. Cf.*De spiritu fantastico*, 220 (109.3–4).

imagination.[69] These ventricles are then connected with the several sense organs by a series of nerves.[70] Connecting them, as well as the two organs of common sense, is the corporeal spirit.[71]

The apprehensive and appetitive process can be synthesised in the following way.[72] The corporeal vital spirit carries the sensible species from the sense organs to the brain where they are received and judged by the power of common sense and imagination.[73] The result of this judgement is then carried by the corporeal animal spirit to the organ of common sense responsible for movement, which is the heart.[74] The common sense spreads the corporeal animal spirit through the body causing this to move,[75] pursuing or avoiding the object of desire.[76]

The main purpose of Kilwardby's *De spiritu fantastico* is to conciliate between Aristotle and Augustine. This conciliation is focused on the experience as the source of sensible knowledge, as in Aristotle, and the activity of the soul as the cause of perception. We know exterior objects through our senses but the image of those ob-

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[69] "Et forte ideo ponuntur due cellule in anteriori parte cerebri ut una sensui communi deseruiat et altera ymaginacione." *De spiritu fantastico*, 201 (103.24–26). Kilwardby seems to believe that Costa ben Luca, Galen and Aristotle agreed about this. Cf. *De spiritu fantastico*, 288 (123.23–27). He argues that common sense and imagination, while having two organs, are *una potentia secundum substantiam* (cf. *De spiritu fantastico*, 285 (122.30–32)).

[70] "It is from that same front part of the brain that the sensory nerves which go to the various parts of the body arise, in order that the proper senses should operate in those various parts." *On Imagination*, 145 (*De spiritu fantastico*, 301 (126.28–127.4)).

[71] "Ex quo sensus communis habet duo, ut ita dicam, domicilia sese a regione respicienta, inter que discurrunt sanguis et spiritus corporeus, cui presidet immediate ipsa sensitiua communis." *De spiritu fantastico*, 280 (121.14–16). ("Between the two [heart and brain] run blood and the corporeal soul which is under the direct control of the common sense." *On Imagination*, 140).

[72] The apprehensive (cognitive power – *virtus apprehensiva*) and desiderative (that causes motion – *virtus appetitiva*) powers are essentially the same. "Item, suppono quod uirtus apprehensiva et ei respondens appetitiva non differant per essentiam." *De spiritu fantastico*, 257 (114.26–27). See also *On Imagination*, 141 (par. 285).

[73] "...quod spiritus illi corporei a cerebro procedant ad organa propriorum sensuum tamquam a loco et organo communis sensus, qui informati exteriorum sensibilium contactu reportant uel transuehunt eorum species ad cerebrum ut de illis iudicetur." *De spiritu fantastico*, 268 (117.22–25). ("...that bodily soul proceeds from the brain to the organs of the proper senses as from the place and organ of common sense, and the soul, duly formed by its contact with outer sensible things, carries back, or transmits, the species of the outer sensible things to the brain so that the brain should make a judgement about them." *On imagination*, 136). Cf. Avicenna, *Liber de anima seu Sextus de Naturalibus*, III.8, 269–270.

[74] This happens because "the mind does not produce acts of sense and motion in the body except by means of heat." *On Imagination*, 138–139. In animals, the source of the heat is found in the heart. Cf. *De spiritu fantastico*, 284 (122.18–21).

[75] "Hence the vital soul, taken from the "vascular" net round the brain, is digested, purified, refined, and clarified in the ventricles of the front part of the brain, and thus it becomes the animal soul, which is then transmitted by way of the sensory nerves in order to activate the "power of" sense in the body, and it is transmitted by way of the motivating nerves in order to produce motion." *On Imagination*, 145.

[76] "Anima indiget pro sui salute prosequi sibi comoda (...) et fugere nociua et aduersa", *De spiritu fantastico*, 207 (105.14–16).

jects results from the soul's natural capacity to become similar to those objects. One could ask about the nature of this likeness/*similitudo* with the object. In Kilwardby, there is no doubt concerning the validity of sensitive representation since the process of perception is ultimately guided by superior causes.

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Perceiving One's Own Body

Mikko Yrjönsuuri

Think of the time you last had a fever. The fever causes a peculiar kind of feeling in your members. You may want to use a thermometer, but in most cases an adult person knows whether he has a fever without such a device. A fever gives very specific kinds of aches in the body, but here I wish to draw attention specifically on the manner in which one feels the excessive rise in body temperature when resulting from a severe fever. In the sauna, in contrast, you feel the heat flowing into your body in a very different manner.

I use a fever as an example of a specific kind of sensory perception. Most philosophical discussions concerning the sensory systems have dealt with perception of an external object. In feeling one's fever, one instead perceives something about oneself; such perception involves no external object. Indeed, in feeling a fever, one's own body is the object of perception in a manner radically different from that in which one may see oneself in a photograph or even in a mirror. Looking at a remote figure in a distant mirror may be self-perception, but of a very different kind; one may not even recognize oneself in the mirror. Sensing the fever happens differently, in an immediate manner. Such sensory self-perception requires no such "mirror". Indeed, in such feelings, one seems to perceive oneself as a bodily subject rather than as a perceived object.

Throughout the history of western philosophy, such sensory self-perception has undergone only sporadic discussion, and has often been overlooked altogether. I will not endeavor to follow here the full history of the sporadic discussion. Rather, I will concentrate on one philosopher, Peter John Olivi (1248/9–1298), who had especially interesting ideas on self-awareness in connection his theory of the sense of touch.[1] The exploration of Olivi's theory of bodily self-awareness will, however, require some general familiarity with its historical setting.

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[1] My main source for Olivi's views on the sense of touch (*sensus tactus*) is his *Questions on the Second Book of the Sentences*, ed. B. Jansen, vol. 3 (Florence–Quaracchi: Collegium S. Bonaventurae, 1922–1926), question 61, which concerns the number of senses: is there only one sense of touch, or can it be divided into several potencies?

S. Knuuttila, P. Kärkkäinen (eds.), *Theories of Perception in Medieval and Early Modern Philosophy,*

1 An Historical Overview

Feeling one's own fever, or even general self-perception seems to defy the traditional picture of the human sensory system. The explanation for this fact is simple: Our scientific understanding of the human sensory systems derives from Aristotle, and in devising his theory he paid no attention to the special case of perceiving one's own bodily state. Indeed, many commentators throughout the millennia have understood Aristotle's theoretical descriptions in such a way as to make such sensory self-perception impossible. Aristotle's model of how sense perception works seems to exclude the possibility of a sense organ perceiving its own state. However, such self-perception seems necessary to perceive one's own bodily state as one's own state. Without such self-referential structure, to perceive oneself would seem possible only in the weak sense exemplified by, say, listening to one's own hands clapping. Sensing one's own fever is, however, self-referential in quite a different manner.

As Simo Knuuttila more closely explains in his contribution to this volume, Aristotle's theory of the structure of sensory perception is based on the idea that the perceived object actualises some potentiality in the sense organ. As Thomas Aquinas, for example, has pointed out, this cannot happen so that the sense organ would itself actualise its own potentiality: to be the actualising agent, it would already have to be actual and not merely potential. Thus, self-perception appears to be theoretically impossible. Also, Aristotle quite clearly states that every perception requires a medium between the perceived object and the perceiving subject. Assigning such a medium for self-perception makes little sense.

The external senses perceive, according to Aristotle, external things. The Aristotelian theory also posits a complicated structure of internal senses. However, these internal senses are not "internal" in the sense of being directed at things internal to the body. Rather, they perceive psychologically internal things such as mental images and memories. Aristotle presented no theory of a sense directed at perceiving things internal to one's own body.[2]

Apart from Aristotle's theory of the human sensory system, which seems relatively unfruitful in accounting for sensory self-perception, classical sources of the history of philosophy offer two important contributions to the theoretical understanding of bodily self-awareness. On the one hand, Plato's *Philebus* (see 31b–36c) presents a theory of pain and pleasure. According to Plato's model, pleasure and

[2] In Aristotle's theoretical statements, the object of sensation is an external thing, not (the state of) the sensory organ or the perceiver itself. (See *De anima* II.5 (417a3–5): "Here arises a problem: why do we not perceive the senses themselves, or why without the stimulation of external objects do they not produce sensation. . .") This is true of all the five senses, although Aristotle of course occasionally recognises that we perceive hunger and other such feelings through the sensory system. For the sense of touch, the object must come in contact with the skin or the flesh. Aristotle's account appears in *De anima* II.11 and *De generatione et corruptione* II.2. For discussion, see C. Freeland, "Aristotle on the Sense of Touch", in M. Nussbaum and A. Rorty (eds.), *Essays on Aristotle's De anima* (Oxford: Clarendon Press, 1992), 227–248.

pain are identified as perceived bodily processes. Among Plato's examples, we find not only hunger and thirst but also the sensations of hot and cold. To give an example, Plato observes that one feels pleasure when the body recovers in some cool place from excessive heat; perhaps he is thinking of finding shade in hot weather. Aristotle seems to follow Plato's understanding of pleasure in his *Nicomachean Ethics* (books VII and X). Aristotle does not, however, develop Plato's remarks concerning what happens in the sensory perception of the state of one's own body.[3]

On the other hand, a number of Stoic sources discuss self-perception as fundamental to the system of perception of any animal. Modern scholars have traced the history of this idea to the first century AD author Hierocles. From the viewpoint of subsequent historical developments, Seneca's discussion of self-perception in his letter 121 is perhaps the most important. According to the model both Hierocles and Seneca describe, every animal is conscious of its own constitution and has self-perception of the qualities and states of its own body.[4]

Quite understandably, these Stoics chose not to relate their discussion of bodily self-perception to the Aristotelian model of sense-perception; they offer no opinion on the correct localisation of self-perception among the various senses. It seems that it was only in the thirteenth century that scholars undertook the task of accounting for self-perception systematically in terms of the Aristotelian model of sense-perception. At that time, the university system had attained unrivalled status in higher education. Furthermore, psychology had an established position in teaching. The Aristotelian model, as presented in his *De anima*, was generally used as the basic textbook for coursework. In other words, it provided the framework for the placement of issues into psychological theory. Although the phenomenon of bodily self-perception saw little discussion even during this period, we do find a number of texts that scientifically scrutinise its relation to the general Aristotelian theory of sense-perception.

In the Aristotelian model, there exist five external senses: vision, hearing, smell, taste, and the sense of touch. If the sensory self-perception of one's own body is unattributable to any "sixth sense", it must be attributed to at least one of these five senses. The most natural candidate is, of course, the sense of touch, and it indeed seems to be the one medieval authors chose, despite the ensuing problems. The context of Aristotle's description of the particular characteristics of this sense suggests that he was thinking about perceiving an external object by bringing one's own

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[3] For discussion, see e.g. S. Knuuttila and J. Sihvola, "How the Philosophical Analysis of Emotions was Introduced", (pp. 5–8), in J. Sihvola and T. Engberg-Pedersen (eds.), *The Emotions in Hellenistic Philosophy*, The New Synthese Historical Library, 46 (Dordrecht: Kluwer, 1998); and S. Knuuttila, *Emotions in Ancient and Medieval Philosophy* (Oxford: Clarendon Press 2004).

[4] Seneca writes in letter 121: "Ergo omnibus constitutionis suae sensus est et inde membrorum tam expedita tractatio, nec ullum maius indicium habemus cum hac illa ad vivendum venire notitia quam quod nullum animal ad usum sui rude est." (Seneca, *Lettere morali a Lucilio*, vol. II, ed. F. Solinas (Milano: Mondadori, 1995), p. 1002.) For discussion, see e.g. A. A. Long "Representation and the Self in Stoicism", in S. Everson (ed.), *Companion to Ancient Thought: Psychology* (Cambridge: Cambridge University Press, 1991), 102–120, repr. as Chapter 12 in A. A. Long, *Stoic Studies* (Cambridge: Cambridge University Press, 1996).

body into contact with it, by touching it. This also seems to be true for many later accounts of the sense of touch, including even those given in the thirteenth century. Along with taste, touch is considered a contact sense by which something other than one's own body is perceived through contact with one's own body. According to paradigmatic examples, we neither taste our own tongues nor feel the softness of our own fingers. Rather, we taste the calamari and feel the softness of the sand at the beach.

In the seventeenth century, René Descartes suggested a reinterpretation of the internal senses that is of particular interest. In his *Principles of Philosophy* IV, 190, Descartes claims that there are altogether seven senses, of which five are external, and two, internal. According to Descartes, there are seven nerves that cause the sensations in the brain, five of which transmit information relevant to the commonly known external senses. Descartes suggests that the two remaining nerves, coming from the heart and the abdomen, are in fact instruments of bodily self-perception. The nerves coming from the heart make us perceive emotions whereas those coming from the digestive organs induce our "natural appetites" such as hunger and thirst. While we need not explore in depth Descartes' theory of emotion, we should nevertheless note that he relates the feeling of hunger and thirst, for example, to the sensory system.[5]

Even Descartes' remarks fail to explain the sensory perception of one's own fever. He assigns no nerves to such sensory perceptions. Indeed, this issue of self-perception poses a genuine problem that medieval philosophers recognised but never really solved; Descartes was not able to provide a fully working model either. When the theory of sense perception is compiled in reference to the paradigm case of perceiving an external object, self-perception remains unexplained. The different sensory qualities of bodily self-perception appear to defy the standard Aristotelian theories of perception. Many thirteenth century authors seem to have recognised this gap in the standard theory of sense perception. Nevertheless, no clear revision of the standard theory seems to have achieved sufficient recognition. Bodily self-perception remained beyond the explanatory reach of psychological theories of sense perception for several centuries to come.

In the twentieth century, psychological theory has posited a new type of sense known as proprioception. The paradigmatic example of what we perceive through this sense is the position of our own body parts. You know how your feet are under the table without looking at them. Also, a dancer has an awareness of the movements of his own body without looking at the mirror in the exercise room. We feel our own

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[5] "Horum sensuum diversitates primo ab ipsorum nervorum diversitate, ac deinde a diversitate motuum, qui in singulis nervis fiunt, dependet. Neque tamen singuli nervi faciunt singulos sensus a reliquis diversos, sed septem tantum praecipuas differentias in iis notare licet, quarum duae pertinent ad sensus internos, aliae quinque ad externos. Nempe nervi qui ad ventriculum, oesophagum, fauces, aliasque interiores partes, explendis naturalibus desideriis destinatas, protenduntur, faciunt unum ex sensibus internis, qui appetitus naturalis vocantur. Nervuli vero qui ad cor & praecordia, quamvis perexigui sint, faciunt alium sensum internum, in quo consistent omnes animae commotions, sive pathemata, & affectus, ut laetitiae, tristitiae, amoris, odii, & similium." AT VIIIa, 316.

body as from the inside, and not only from the objective perspective of external perception. Proprioception provides us a rather distinctive type of awareness of our own bodies, an awareness that one can have only of one's own body. In this way, we can quite appropriately call it a type of self-perception.[6]

On the basis of elementary textbooks in psychology, the theory of proprioception remains still somewhat unsettled. Opinions vary on how to characterise it and how to classify the different types of sensory perceptions belonging to its field. For example, whether the perception of heat in one's own body is a sensation perceived proprioceptively remains unclear. Furthermore, most contemporary philosophical discussions of bodily self-perception appear to ignore such a type of sense-perception. For this reason, my aim in this paper is not purely historical. I do indeed wish to shed light on the historical accounts of bodily self-perception, but in addition I focus more on the variety of ways in which we can account for self-perception in our current historical situation.

2 Unity of the Sense of Touch

In his well known work *Conciliator*, Pietro d'Abano aims to reconcile the various views held by the doctors and philosophers of his time. In *differentia* 77, "Whether pain is sensed or not" (*Utrum dolor sentiatur, necne*) d'Abano takes into consideration the nature of pain. He argues that pain is an object of perception rather than a perception of some other prior object. More specifically, he pursues the view that pain is perceived by one's sense of touch. He admits that pain does not appear in standard lists of qualities perceptible by touch. As d'Abano points out, however, the variety perceptible by touch is very wide. D'Abano also notes that pain is not a quality but rather a relation, and thus acknowledges a specific kind of subjectivity in its perception.[7]

D'Abano discusses two particularly illuminating examples in respect to his conception of pain as something perceived by the sense of touch. He mentions that he

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[6] A. A. Long compares some Stoic formulations with the theory of proprioception; see *Stoic Studies* (Cambridge: Cambridge University Press, 1996), 258–259.

[7] Pietro d'Abano writes: "Manifestum quod omnes aliae tactibiles differentiae reducuntur ad primas quattuor, haec vero non amplius in minores. Non tamen calidum est quod siccum, neque quod humidum, et sic de aliis, neque sub invicem extant, ut sub calido et humido. Unde ex his nonnulli sumpserunt causam erroris volentes dolorem et delitiam in primas reducere qualitates. Quod non est, quia si hi in prima deducuntur eo quod ab ipsis causatur, tunc et sensibilia aliorum quattor sensuum reducentur in tactum, cum causentur ab illis. . . .Cuius falsitas est apparens. Amplius sciendum quod Aristoteles ponit ibidem dolorem fore unum tactus sensibilium inquiens." Pietro d'Abano, *Conciliator differentiarum philosophorum et precipue medicorum* (Venice: Juntas, 1565), f. 117va. And later: "Dolor est una qualitatum et delitia, est namque in passione et passibili qualitate locandus. . . .Neque hoc impediret supposito etiam dolorem ad aliquid fore, quia primae qualitates directe in genere locantur qualitatis, grave et leve in praedicamento substantiae, asperum et lene in genere positionis . . . et tamen sunt unius sensus, puta tactus obiecta." Pietro d'Abano, *Conciliator*, f. 118ra.

suffers from pain in his bladders while writing, which he perceives merely as pain without prior qualities: a localizable, perceptible object having pain as its specific nature. Similarly, he claims, in copulation one feels a pleasure based not on any prior sense qualities, but perceived simply as a localisable pleasure in one's own body.[8]

For our purposes here, it is important to note that d'Abano's theory is distinctively un-Aristotelian. Aristotle already recognised the wide variety of objects of touch, and wondered whether this sense really has unity. However, when d'Abano includes pleasure and pain among objects perceptible by touch, he departs from Aristotle's thinking. In d'Abano's discussion, the variety of objects perceptible by touch overflows to phenomena internal to one's own body. Thus, touch is not really a contact sense, since it requires no contact between two corporeal entities. Rather, touch encompasses the category of bodily self-perception. Also, d'Abano appears to have thought that the evaluative nature of pleasure and pain is immediately perceived rather than cognitively construed.

Although Olivi rejects the idea that pleasure and pain are perceptible by touch, these features of d'Abano's theory nevertheless exist in Olivi's more elaborate theory of the sense of touch. Olivi begins his discussion of the sense of touch with a long list of things it can perceive, purporting to show that touch is not only one sense:[9]

> First, because touch apprehends many things that differ in kind as much as the objects of the various senses, such as heavy and light, hot and cold, moist and dry, hard and soft, dense and fine, and also manifold dispositions and indispositions of the organ itself and of the whole body; further, the catarrhs in indigestion, in inflation, in aposteme, and febrile heats and the emptiness and the needs of the body, and its fullness in satiety, and the various itches of the flesh, and the agile mobility or the opposite tardity of the members, and their enduring strength or flimsy weakness, and their wounds or integrity, and the pains and pleasures they cause, seem to be sensed by touch, and they differ from each other as much as colour and sound differ.

Olivi provides this list, perhaps borrowed from some other author, as the first argument for the plurality of senses of touch. In his analysis of the argument, Olivi

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[8] "Similiter praedicta ente passione sentitur ea non raro absque qualitatum aliqua prima seu secunda. Unde, cum hoc scriberem, dolor mihi in scapula supervenit in qua satis sensibilis existens nullam potui primarum neque secundarum qualitatum sensibilium praetactarum praeter passionem tristem percipere. Rursus in coitu quae qualitatum percipitur primarum aut secundarum nisi sola convenientis cum convenienti coniunctio quae est delitia." Pietro d'Abano, *Conciliator,* f. 117^{vb}.

[9] The full first argument for the plurality of tactile potencies is as follows: "Primo, quia multa per tactum apprehenduntur quae non minus differunt genere quam obiecta diversorum sensuum, utpote, grave et leve, calidum et frigidum, humidum et siccum, durum et molle, densum et subtile, et item multiplex dispositio et indispositio proprii organi et totius corporis; nam gravedines indigestionum et inflationum et apostemationum et calores febriles et corporis inanitatem et indigentiam et satietatis plenitudinem et varios pruritus carnis membrorumque agilem mobilitatem vel contrariam tarditatem eorumque constans robur ac inconstantem debilitatem eorumque scissuram vel integritatem ac dolores et delectationes ex his causatas videmur sensu tactus sentire, quae utique non minus ab invicem differunt quam differant a colore vel sono." Olivi, *Quaestiones in secundum librum Sententiarum*, vol. II, p. 574.

commits himself to most of the list, excluding only its two last items. As Olivi sees it, pleasure and pain are not immediately sensed but concomitant upon other sensations, and "pertain more to the common sense."[10]

Closer examination of the items in the list reveals key insights into Olivi's thinking concerning the sense of touch. He begins with the relevant classical Aristotelian categories, and then proceeds beyond Aristotle. The variety of specific feelings that we experience in specific illnesses begins the extension. Then come the needs of the body, such as hunger and thirst, followed by their opposites; one can also feel satiety after a meal. Then there is the plurality of feelings we can experience on the skin, as well as the feeling of how we use our limbs. The last listed item that he accepts is how we sense our bodily wounds.

Olivi's list is rather short on the specific category that is nowadays called proprioception. However, the following example clearly indicates that he also includes the local perception of one's own bodily members in the sense of touch. Olivi says that we feel "the location or posture or position in stability and rest, or in instability and unquiet, of it [the organ of the sense of touch] and its parts."[11] Furthermore, Olivi seems to think that we can also perceive our own muscular strength. In this, he seems to be right: while jogging, on some days the feet feel much clumsier than on others.

The complexity of this list clearly indicates that Olivi has in mind a more complex problem than Aristotle had in *De anima* II.11. Olivi has a very rich view of the variety of sensations left over when each of the four other senses has received its share. Nothing in this list can be either seen, heard, smelt or tasted. Yet they can be sensed, and thus they must be sensed by the fifth remaining sense: touch. In some way, this sense serves as the theory's dumping ground for those sensations that otherwise defy categorisation elsewhere in the system. Since Olivi has so rich a conception of the variety of these dumped sensations, it is only sensible to ask whether sufficient cause exists to combine all the sensations into functions of a single sense. Why should we think that such a unity in such a list even exists at all?

Olivi's way of supporting his own suggestion for a unified definition of the sense of touch is very complex, and he himself recognizes that it is inconclusive. Perhaps the greatest weakness of his argument is that he fails to provide a clear criterion of what the unity of a sense actually could mean. He does manage to reach a common denominator of all the things sensed by none other than the sense of touch. Whether this suffices to claim that we have only one sense of touch, remains an open question. After Olivi's discussion, however, the problem seems more verbal rather than real.

Olivi's common denominator is simple and ingenious, and clearly contrasts with the Aristotelian theory of sensation. Olivi claims that the sense of touch is a faculty

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[10] "Excipiunt tamen a praedictis dolorem et delectationem, quia sicut tactus non potest sentire suum proprium actum nisi forte valde semiplene, sic non potest sentire dolores vel delectations consequentes et concomitantes suum actum, sed potius hoc spectat ad sensum communem, sicut infra tangetur." Olivi, *Quaestiones in secundum librum Sententiarum*, vol. II, p. 583.

[11] "...sicut est stabilis et quieta vel instabilis et inquieta mansio vel situatio vel positio eius et partium suarum." See Olivi, *Quaestiones in secundum librum Sententiarum*, vol. II, p. 580.

of self-perception. Unlike all other senses, which perceive external objects, the sense of touch allows us to perceive certain features of the sense organ itself. By the sense of touch, one perceives one's own body. Olivi formulates this phenomenon as follows:[12]

> The object of the sense of touch is the whole group of features in which the appropriate or inappropriate constitution of the body of the animal may consist. And if you wish to specify this to the human sense of touch, the object of the human sense of touch is the whole group of features in which the constitution of the human body may be perfected or forsaken.

Thus, Olivi suggests that an animal's sense of touch provides an evaluative report on the state of the animal's body to the animal itself. The principle works the same in humans. The sense of touch allows us to feel how we are, at least in the bodily sense.

3 Evaluative Feelings of the Body

Olivi faces a variety of objections in his discussion, one of which urges a return to the Aristotelian theory. We should, says the objector, draw the picture so that the external object causes a change in the organ, which then perceives the external object through this change. The hand feeling heat turns hot; we feel the heat of the fire through this physical change in the temperature of the hand itself. Thus, although the sense organ itself changes, the primary object of sensation is external.[13]

In his response, Olivi invites us to look closer at another example. A hand feels the heavy weight of a piece of lead or stone. How does this happen? Not through the hand becoming heavy, since the weight of the hand does not change, "although it does achieve a certain inclination towards the center [of the earth]." According to Olivi, in the sensation, the sense organ is changed not "by a natural alteration, but only by a psychological one."[14] Thus, the sensation itself is not any corporeal change of the sense organ: "the formal action of and the change in the sense faculty by which it actually senses its object is a living, psychological, cognitive and intentional action and change; thus it does not have the nature of a bodily or natural change."[15]

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[12] "...obiectum tactus est totum illud genus formarum ex quo corporis animalium debita vel indebita consistentia constitui potest. Et si vis hoc ad tactum humanum specificare, obiectum tactus humani est totum genus formarum ex quo consistentia corporis humani perfici vel destitui potest." Olivi, *Quaestiones in secundum librum Sententiarum*, vol. II, p. 585.

[13] "In quinto autem, scilicet, in tactu, hoc invenitur; nam manus tangens calorem fit calida et tangens frigida infrigidatur et tangens humida humectatur." Olivi, *Quaestiones in secundum librum Sententiarum*, vol. II, p. 576.

[14] "Secundo, quia quando manus sentit grave pondus plumbi vel lapidis, non dicitur ex hoc fieri gravis, quamvis quandam inclinationem accipiat versus centrum. ...Quando etiam tactus sentit bonas vel malas dispostiones organi sui, tunc non alteratur de novo alteratione naturali, sed solum animali." Olivi, *Quaestiones in secundum librum Sententiarum*, vol. II, p. 577.

[15] "Sic autem fit in proposito, quia formalis actio et immutatio sensus per quam actu sentit suum obiectum est actio et immutatio viva et animalis et cognitiva et intentionalis; unde non est de natura corporalium et naturalium alterationum." Olivi, *Quaestiones in secundum librum Sententiarum*, vol. II, p. 577.

Olivi seems hold that when you feel the weight of a stone in your hand, you feel in your hand the pull of the stone towards the centre of the earth. You feel how your muscles have to do extra work to keep the stone from falling. This sensation is not, as Olivi sees it, a physical change in the hand, but a sensation of how the hand fares in the job allocated to it. As such, it is a cognitive event. Furthermore, the sensation that the stone is heavy is mediated: you feel how your hand is doing, and through this feeling you also notice that the stone is heavy. Thus, the external object is not immediately sensed.

It may seem that Olivi simply seeks to reject the classical Aristotelian understanding of the function of the sense of touch, given that his examples of the objects of touch fundamentally differ from Aristotle's paradigm examples. We must also bear in mind Olivi's anti-Aristotelian attitudes upon other issues. Nevertheless, we can see from another angle that Olivi is not really rejecting the Aristotelian model, but extending and reformulating it. Even in his theory, it appears natural to explain the tactile perception of external objects in the traditional Aristotelian manner through consideration of the natural change of the organ itself.

In the traditional Aristotelian picture, when one stretches one's hand toward a fire, the heat of the fire is felt by the hand becoming hot. Aristotle suggests that this increase of temperature is relevant to the perception, but is itself not the object perceived; Olivi claims that it is. He argues that if such a change occurs when we feel external objects, we should rather say that the external object is felt only through feeling the change in the organ itself. We could not feel the heat of the fire if we did not feel how it warms our hands. We feel ourselves, and thereby something about the external things.

We are apparently approaching a very widespread epistemological issue. How exactly do we perceive external objects? Olivi seems to recognize that the model intended for the sense of touch may apply to the other senses too. And indeed, if we assume that perception primarily concerns the sense organ itself when the sense of touch is at issue, why should we describe the other senses differently? For example, can we say that we primarily see external objects? Should we not say, rather, that we perceive the image in the eye, and see external objects only through it? Then the direct object of seeing would be the visual image in the eye, and this image would represent the external object that has caused the image. Simply put, Olivi's account of the sense of touch seems to lead us onto a slippery slope towards a generally representational theory of sensation where we are in direct intentional relation only with objects internal to the body. The ensuing philosophical problems are, however, beyond the scope of this article. Olivi himself believes that he can save himself from the slippery slope towards general representationalism. He explains that all the other senses perceive external objects directly, and only the sense of touch is a faculty of bodily self-perception.[16] Leaving the other senses aside, let us thus concentrate on how Olivi's idea that the first sensory object is the organ itself works in the case of touch.

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[16] "Reliqui vero sensus habent pro proprio et primo obiecto aliquam formam alterius corporis a suo organo differentis." Olivi, *Quaestiones in secundum librum Sententiarum*, vol. II, p. 579.

To illustrate his idea, Olivi uses the example of a pinprick. Do you feel the pin immediately, or only the prick? Olivi holds that the sense of touch allows you to feel the prick, but secondarily and simultaneously the pin that causes the prick. The prick constitutes damage to the organ, and is felt as exactly that. Perhaps in some cases you might only feel the damage and not its cause, but given the immediate causal relation between the pin and the prick, you might also sense the pin. Thus, you perceive the pin only as the cause of the damage.[17]

Another example from Olivi explains that when you look into the sun, you feel how your eyes get dazzled. According to Olivi, people are tempted to say mistakenly that they sense the painful dazzlement through vision and not through sense of touch. This is because it is easy to confuse between seeing the brightness of the sun and feeling the harm caused to the eye. According to Olivi, at the level of sensory perception vision is not really involved in the phenomenon, and one ought to recognize that the harm in the eyes caused by the sun is felt, not seen, and results in a kind of pain that seeing can never cause.[18] In comparison to Pietro d'Abano, it is interesting to note that Olivi's view is that the dazzlement is not a pain as such. Rather, one feels through touch something harmful, and in further cognitive processing this feeling results in a pain. Thus, the sense of touch does not strictly speaking feel pain in the eyes, but dazzlement.

Olivi's example poses even a further problem. According to Olivi, almost all of the body is capable of feelings through the sense of touch, including the organs of the other senses. When you are dazzled, you see the bright light with your eyes, but you also feel the dazzlement in your eyes. Therefore, you can both see and feel with your eyes. In this way, each eye is in fact an organ of two different senses. The sense of touch conveys information on how the eye itself is doing, while sight provides visual information about things seen. But how exactly do we distinguish these two senses in the same organ?

Olivi considers an even more striking example concerning this problem, approaching it from the opposite direction. Tinnitus seems to be a sound that originates

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[17] "Dicunt enim quod proprium obiectum tactus est intrinsecus status sui organi, et ideo omnia illa quae ipsum intrinsecus variant vel afficiunt sunt obiecta sensus tactus, licet non semper possint ab eo percipi, nisi sint ibi sub debita quantitate. Per variantia autem vel afficientia organum tactus non solum intelligent formas huiusmodi affectionum, sed etiam earum efficiens immediatum. Unde tactus simul sentit puncturam factam ab acu et acumen ipsius acus a quo illa punctura efficitur." Olivi, *Quaestiones in secundum librum Sententiarum*, vol. II, pp. 578–579.

[18] In a series of counterarguments, Olivi considers the following: "Sexto, quia quilibet sensus videtur aliquo modo sentire propriam immutationem sui organi quam habet in suo actu, unde visus sentit diverberationem quam patitur in aspectu solis, et idem est de aure in auditu fortis tonitrui." Olivi, *Quaestiones in secundum librum Sententiarum*, vol. II, p. 580. The answer runs as follows: "Praeterea, diverberationem visus sentire est forte uno modo idem quod aliquid cum quadam visus diverberatione videre, ita quod ipsa diverberatio est formaliter in ipso actu visus quam praeit altera in visuali aspectu ipsam naturaliter praeeunte. Ex illa autem diverberatione fit quod lux solaris vel eius radii videntur homini quasi versus solem vel versus oculum frangi et diverberari. Et ideo videns aestimat se sui actus diverberationem videre, quamvis non videat; sicut et quando quis cum nave currit, videtur sibi ripa terrae moveri, cum tamen ille motus non sit in ripa, sed in nave et in corpore videntis." Olivi, *Quaestiones in secundum librum Sententiarum*, vol. II, p. 582.

in the ear itself. However, the hearing should be directed at external things, not anything in the ear. The sense of touch is directed at things internal to the ears, and provides information on the ear's welfare. Since tinnitus is in no way external to the body, it seems that we should attribute the ringing in the ear to touch.[19] But, surely, we do not perceive sounds through touch.

The crucial point in Olivi's explanation of this phenomenon focuses on his criterion for distinguishing the features that can be felt. Obviously, neither the hand nor any other particular organ of the sense of touch can perceive all the features of the organ itself. We do have sensations in our stomachs, but we never feel the colours of the intestines. We do not feel sounds, not even when they are internal to the body; we feel only a part of the qualities of our organs. Thus, the question arises: Which qualities do we feel and which do we not feel?

The division of labor between the four other senses depends on the distinctness of the sensible qualities at issue. Taste and sight perceive different things because flavor and light are different things, and the same holds for smell and hearing. Each of these senses has its own "proper sensibles" and is thereby distinct from the other senses that have their own "proper sensibles". Aristotelian characterizations describe the distinctness of the sense of touch in this manner as well. According to Olivi's theory, however, the sense of touch does not have genuine "proper sensibles"; we can feel an inexplicable variety of feelings.

As we already saw, Olivi's criterion is that you can feel those things relevant to the "appropriate or inappropriate" constitution of your bodily members. You do not feel the colour, smell or taste of your members, because these qualities do not constitute the bodily well-being of those members. The same is true, according to Olivi, of the sound you hear in tinnitus. The sound in the ear does not constitute the health, strength, balance and movements of the ear.[20] Consequently, one does not feel the sound, although one may well feel the agitation causing the sound in the ear and indeed find it painful.

Olivi seems not to notice that he is in fact giving a two-fold description of – without making a distinction – what one feels. To understand why he lumps bodily movements together with the constituents of bodily health is difficult. Bodily movements are nowadays attributed to proprioception, but the idea that we feel the constituents of our own bodily health receives little mention in discussions of

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[19] "Secundo, quia secundum hoc tactus posset sentire intrinsecum colorem et saporem vel splendorem et odorem et sonum vel tinnitionem sui organi." Olivi, *Quaestiones in secundum librum Sententiarum*, vol. II, p. 579.

[20] "Verumtamen isti ad duo prima argumenta contra eos hic facta respondent quod non quaecunque dispositio sui organi est obiectum tactus, sed solum illa quae facit ad debitam vel indebitam consistentiam eius, sicut est sanitas et aegritudo vel debilitas et fortitudo aut temperies vel intemperies suae complexionis et suarum qualitatium complexivarum aut sicut est stabilis et quieta vel instabilis et inquieta mansio vel situatio vel positio eius et partium suarum. Huiusmodi autem ratio est satis specificata ad intrinsecam consistentiam proprii organi, ad quam quidem non spectant color et odor et sapor, quia sanitas vel aegritudo vel robur et debilitas vel stabilitio et concussio non constituitur ex istis. Sonus etiam, in quantum sonus, non spectat ad hoc, sed solum concussio organi ex qua causatur in eo sonus." Olivi, *Quaestiones in secundum librum Sententiarum*, vol. II, p. 580.

proprioception. But Olivi's criterion is that we feel things that constitute our own well-being. To maintain this theoretical position, he would have to describe proprioception in terms of success in intended motion rather than of passive knowledge of the position of one's feet under the table. Thus, no passive proprioception would exist, but only activity-related. Olivi's theory suggests that I would perceive through the sense of touch the position of my feet under the table only if I try to move them. In this respect, Olivi's way of understanding proprioception seems to differ from the most common current physiological explanations of these sensations. Nevertheless, at least on the surface, his theory may account for the relevant phenomena as well as or even better than the contemporary theories of proprioception.

The philosophically crucial principle at work here is the distinction between things that are relevant to health, or to the appropriateness of one's bodily constitution, and those that are not. As we saw, Olivi recognizes that we feel some things which do not at first sight appear to fulfil this principle, but these things might be brought to comply with the principle. On the other hand, Olivi may be plainly wrong if he thinks that we can feel all those things in our body that are relevant to our bodily well-being. This would amount to claiming that our sense of touch tells us everything that is wrong in our body whenever we experience even the slightest sickness. His formulations seem to suggest this incredible view, but presumably he rather thinks only that we never feel anything irrelevant to well-being. The sense of touch provides a direct and immediate self-perception by which one grasps how one's body is faring. The sense of touch is, therefore, self-reflexive and immediately evaluative, and differs from all the other senses in both of these features.

4 Three Levels of Self-reflexivity

One of the counter-arguments Olivi encounters in his discussion of bodily self-perception has to do with self-reflexivity. He himself argues for the incorporeality of the intellectual part of the human soul through assuming that self-reflexivity is inconsistent with corporeality. If so, how can the sense of touch, which is the most elementary of the senses found in all animals, be self-reflexive?[21] Take, for example, a simple worm and its sensations. Are we really to believe that the worm has a self-reflexive perception of itself? Is self-reflexivity not something that requires a considerably more complex structure?

Nowadays, we are tempted to say univocally that the worm is not conscious. According to Olivi, the sense of touch is self-reflexive even in a worm, but the kind of self-reflexivity at issue differs from the characteristically human free and intellectual self-reflexivity. To exercise free will, Olivi claims, is to direct one's will upon the will itself and to choose to change one's own will by one's own will.

[21] "Quinto, quia actus potentiae organicae non est ab ipsa sola, sed potius a composito ex ipsa et organo, quod quidem in agendo non est super se reflexivum, saltem primo et immediate. Ergo non potest primo et immediate sentire dispositions sui organi." Olivi, *Quaestiones in secundum librum Sententiarum*, vol. II, pp. 579–580.

It is, thus, self-motion, and as such is impossible in the corporeal sphere. No such complete self-reflexivity exists in the case of touch, or in worms. More specifically, the sense of touch is able to "reflect neither upon the intrinsic and spiritual essence of the power itself, nor upon its intrinsic act."[22] In other words, the sore feeling in my body when I have a fever is not a perception of being able to feel, nor a perception of having a sore feeling in the body; rather, it is merely a sore perception of the fever in one's own body.

Olivi seems to distinguish altogether three basic types of self-reflexivity. The lowest type is that of the sense of touch, and that can be found even in worms. The highest type is the specifically human self-reflexivity that allows us to be free intellectual agents. Between these two, exists a third, which Olivi presents with the example of a dog who sacrifices one of its paws to save its head. As Olivi describes that choice, the dog possesses a faculty which enables it to monitor all the activities of the different parts of its whole body. In short, the dog has a self-image. Also, the dog realises that the head is a more important part of him than the foot. But what the dog's self-reflexivity lacks is the awareness that it possesses the self-image. The dog conceives all its parts and faculties in its awareness, save the awareness itself.[23]

My general impression of Olivi's theory of self-reflexive freedom is that he would have seen no major difference between our normal human states of awareness and those of a dog. Normally we do not conceive of ourselves in the actual act of self-reflection – of thinking about oneself. We are normally unaware of ourselves in this way. The main exception is exercising one's freedom, which Olivi thinks to be possible for all mentally healthy, awake adult humans. When making a choice as one's own free choice, one does actively conceive oneself as exactly the person upon whom the choice depends. But this is an exceptional case, at least as an actual state of awareness. Our freedom more typically remains potential so that we are vaguely aware that if we had desired differently, we could have chosen otherwise. That is, our state of self-perception is usually not much different from that experienced by other higher animals, as with the dog in Olivi's example. On some rare occasions, we in full self-awareness make choices as free choices fully dependent on ourselves: in such cases Olivi thinks that we act in a way impossible for any non-human animal.

When Olivi attempts to explain how we know what is taking place in our minds, he first distinguishes two kinds of knowledge. One of these kinds resembles what

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[22] "Rursus dicunt quod licet agens organicum non possit super se sic simpliciter et intellectualiter reflecti sicut possunt intellectus et voluntas. . . .Pro quanto autem tactus intimius sentit quam ceteri sensus, pro tanto virtualem aspectum suum et sui organi intimius reflectit super suum organum. Non tamen potest ipsum reflectere super intrinsecam et spiritualem essentiam ipsius potentiae nec super eius intrinsecum actum, quia hoc est proprium potentiarum superiorum." Olivi, *Quaestiones in secundum librum Sententiarum*, vol. II, pp. 581–582.

[23] "Ergo sicut illam appetitivam oportet dominari omnibus membris et sensibus quos ad suos actus applicat vel ab eis retrahit: sic oportet unam iudicativam sibi assistere quae de omnibus actibus eorum iudicet et eorum delectationes vel dolores advertat et alteram alteri praeferat vel praeferendam ostendat. Praeterea, quando canis vel serpens pro conservatione capitis exponit aliud membrum aut pro conservatione totius exponit aliquam partem, tunc praefert totum parti et caput alteri membro." Olivi, *Quaestiones in secundum librum Sententiarum*, vol. II, pp. 587–588.

philosophers after Descartes have known as self-consciousness, while the other is more abstract and theoretical. By virtue of this abstract knowledge, we know what, for example, a thought is. When explaining Cartesian self-consciousness, or the immediate awareness of the events occurring in one's own mind, Olivi alludes to the sense of touch.[24]

The specifically human kind of reflexivity is, thus, not constituted in our direct awareness of what is taking place in our psychological systems. Such awareness of our spiritual essences and psychological states simply replicates on another level the direct awareness that all animals experience of their own bodies and bodily functions. As Olivi sees it, mental self-consciousness differs little from bodily self-consciousness. For Olivi, the case of the self-reflexivity of the will is of much greater importance, because its ability to self-reflect sets it free.

Thus, the difference between human and animal self-reflexivity would not really constitute a difference in self-consciousness as discussed in the contemporary philosophy of mind. The difference concerns only a specific kind of content of consciousness of which no other animal but humans are capable. We also know ourselves as mental entities, while the dog perceives itself only as a bodily living thing with a perceptual system to guide it. On the other hand, the self-awareness gleaned through common sense seems to differ greatly from that based on the sense of touch. The dog can conceive of itself as a whole consisting of a multiplicity of parts with different functions. Through the sense of touch, a simple animal would only be able to feel particular sensations concerning its bodily well-being.

It is, however, important to recognize that a simple perception through the sense of touch may suffice as a reason for acting, if analysed as Olivi suggests. Two features involved in his analysis are of particular relevance. First, every sensation is evaluative; something is perceived as "appropriate or inappropriate".[25] Also, the sense of touch conveys sensations that concern the acting subject; already the simplest perceptions are evaluative and self-reflexive. But notably enough, the sense of touch need not yield any full picture of what I am nor tell the ultimate aims of my moral aspirations. I receive no articulated self-image through the sense of touch, nor can this sense engage in moral reasoning. The action guided by the sense of touch can be described as automatic reactions. This is, of course, what the theory must predict. After all, if you put your hand to the hot stove, you will pull it back automatically without considering who you are or what is important in your life. You simply feel the burn and without thinking try to avoid it.

When discussing the sense of touch, Olivi speaks of a crucial part of the self-regulative system found in all animals. It is self-reflexive, but not complex enough to yield a self-image. Interestingly enough, Olivi thought that this system is the same in both humans and even the simplest animals.

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[24] "Primus est modum sensus experientialis et quasi tactualis. Et hoc modo indubitabiliter sentit se esse et vivere et cogitare et velle et videre et audire et se movere corpus et sic de aliis actibus suis quorum scit et sentit se esse principium et subiectum." Olivi, *Quaestiones in secundum librum Sententiarum*, vol. III, p. 146.

[25] See Olivi's definition of the objects of the sense of touch, footnote 12.

5 Pain and Embodiment

As we already saw, Olivi attributes pleasure (*delectatio*) and pain (*dolor*) to common sense (*sensus communis*) rather than the sense of touch. His theory suggests that feeling, say, a prick caused by a pin differs from the concomitant pain. Olivi fails to specify why he distinguishes between these two, but in this feature his theory agrees with recent physiological accounts of pain.

Many philosophers have used the phenomenon of bodily pain to describe the point where human embodied nature is at its clearest. Such is, for example, Descartes' strategy in *Meditations on First Philosophy*, meditation 6, where he suggests that when I feel pain, I locate it somewhere in the body, and in that pain I feel that my body is not just mine in the way a ship belongs to the captain, but in a stronger way: that my body is me, or that my mind and body are one.[26]

In his physiological theory, Descartes connects pain with the sense of touch (*Principia Philosophiae* IV, §191; AT VIIIa, 318), apparently in the same way Pietro d'Abano did. Several other sensations, which Olivi attributed to the sense of touch, Descartes attributed to an un-Aristotelian category of "internal sensations". Descartes includes in such sensations passions like "joy, sorrow, love, hate and so on" (IV, §190; AT VIIIa, 317; see footnote 5). These are sensations of things internal to the body, and play a very specific role in how we guide our actions. Meditation 6 shows that as the feelings of pain, hunger and other internal sensations convey us a feeling of what to seek and what to avoid for the sake of our well-being as a soul-body union.

Descartes' classification may seem more natural to a twenty-first century reader than that of Olivi. For Descartes, feelings concerning the state of the body are assimilated to emotions, while Olivi separates them and combines feelings about the body with certain sensations concerning objects with which the body comes into contact. This difference in the classifications reflects a difference in a more general understanding of the nature of sensations. Despite his anti-Aristotelian tendencies, Olivi remains within the paradigm that our senses reveal to us the true nature of things. A feeling of heat allows us to know the true quality of heat. Descartes thought otherwise; as he points out in his meditation 6, the feeling of hunger is merely a feeling that tells us to eat, but in no rationally explicit manner. The case is the same with all the different kinds of pains. According to Descartes, no other reason exists to compel one to believe there is something similar to the feeling of heat in the world than to compel one to think that there is something similar to the feeling of pain when a fire burns. Here also, Olivi had different view, since he thought of pains like dazzlement that have obvious cognitive content and thus wanted to distinguish between the sensation conveying information from the actual pain.

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[26] "Docet etiam natura, per istos sensus doloris, famis, sitis etc., me non tantum adesse meo corpori ut nauta adest navigio, sed ille arctissime esse coniunctum & quasi permixtum, adeo ut unum quid cum illo componam." AT VII, 81.

More interesting than this difference in classifications is a central similarity between Olivi's theory of the sense of touch and Descartes' account of the internal senses and the sense of touch. Both of these philosophers discuss how we feel our body. We are bodily subjects, and we perceive corporeal things, our own organs, as parts of ourselves through self-reflexive sensation. Both of these philosophers recognise a crucial distinction between internal and external within the corporeal world. Some of the sensations concerning corporeal objects are internal and self-reflexive in this way, while others are not. That is, a part of the corporeal world I feel as me, while most of it is not.

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Pietro d'Abano and the Anatomy of Perception

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1 Introduction

Pietro d'Abano (c. 1250–1316) was Italian by birth and received his basic education in Padua. At some point in his life (unclear when) he travelled to Constantinople where he is said to have learned Greek. Towards the end of the thirteenth century he moved to Paris. In Paris, he soon got into serious troubles with the inquisition. He says himself that it was the Jacobites, that is, the Dominican friars at the convent of St. Jacques in Paris, that accused him of 54 errors. He was, for example, accused of holding that "the intellective soul is educed from the potency of matter."[1] He claims that this was never his view, however, and that they had misunderstood him, but he also claims to be approaching medical science as Aristotle and Averroes had approached natural philosophy, and that there is no need to involve God in this study.[2] This was probably not a good thing to say in light of the 1277 condemnation and what had happened to the Averroists Boethius of Dacia and Siger of Brabant, who had claimed exactly this. He was, however, never convicted and left Paris in the early fourteenth century (c. 1306) and returned to Padua. In Padua, he soon again

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[1] "Et ideo apparet hic erroneus intellectus Iacobitarum me persequentium tamquam posuerim animam intellectivam de potentia educi materiae; differentia 9; cum aliis mihi 54 ascriptis erroribus." (Pietro d'Abano, *Conciliator differentiarum philosophorum et praecipue medicorum* (Venice, 1496), d. 48, f. 68ra). The view that the intellective soul is educed from the potency of matter was often attributed to Alexander of Aphrodisias in the fourteenth century. See H. Lagerlund, "John Buridan and the Problems of Dualism in Early Fourteenth Century Philosophy", *Journal of the History of Philosophy* 42:4 (2004), 369–388 for a discussion of this.

[2] "Dicendum, secundum Aristotelem et Commentatorem, quod Deus nihil potest in haec operari absque medio, cum eius omnis actio hic mediante motu et transmutatione perficiatur, ita ut periodus a supernis corporibus in hac inferiori materia inducta non habeat permutare, cum ad id sequatur quaedam inordinatio, ac defectus et mutabilitas in primo, tanquam non sapienter primitus omnia producenti denotetur inesse." (*Conciliator*, d. 113, f. 163va.)

S. Knuuttila, P. Kärkkäinen (eds.), *Theories of Perception in Medieval and Early Modern Philosophy,*

got into trouble with the inquisition, but died before he was charged with anything. Apparently, his bones were later burned in Padua as a sign of his heresy.[3]

Pietro's most famous work is the *Conciliator differentiarum philosophorum et praecipue medicorum*. It was, presumably, written during his time in Paris and then perhaps revised later on in Padua. Its possible influence on fourteenth century philosophy has been very little studied (it is in general very little studied), but it later became a standard text in medicine and was printed numerous times in the late fifteenth and early sixteenth centuries.[4]

He also wrote another work that was perhaps not as influential as the *Conciliator*, but was also printed numerous times in the late fifteenth and early sixteenth centuries, namely the *Expositio problematum Aristotelis*. It seems also to have been written during his Paris period and then revised in Padua. It was often circulated in the fourteenth century in a shortened version by John of Jandun (c. 1317).[5]

Both of these works are very interesting from the perspective of the history of late medieval psychology, and they have hardly been studied from that perspective at all. In this paper, I will mainly deal with the *Conciliator*, but I will also refer to the *Problemata*. The aim is to look at how questions and problems about perception were dealt with in a late medieval medical treatise. I cannot here present a complete study of this kind, particularly since Pietro's discussions are so rich and detailed that a paper of this kind is simply not large enough to incorporate it all. I hope to present an accurate – although admittingly sketchy – picture of his view of sensation and perception.

The general aim of the *Conciliator* is to give a unified account of Aristotelian philosophy and medicine – hence the title of the work. This is very much apparent in his discussion of the five senses. He wants to bring the doctrines of Aristotle as they are presented in the *De anima* and *De sensu et sensato* in agreement with the medical authorities of the time, that is, with Galen and Avicenna. The treatment is mainly anatomical and physiological and hence it is the natural philosophy or science of perception he finds interesting rather than the philosophical problems of perception. However, as will be clear, his discussion also raises some very central philosophical problems.

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[3] See D. N. Hasse, "Pietro d'Abano's Conciliator and the Theory of the Soul in Paris" in J. Aertsen, K. Emory and A. Speer (eds.), *Nach der Verurteilung von 1277. Philosophie und Theologie an der Universität von Paris im letzten Viertel des 13. Jahrhunderts. Studien und Texte* (Berlin: Walter de Gruyter, 2001), 636.

[4] See Hasse (2001), 637, n. 13, for references to some studies on its influence on the medieval medical tradition, and see also N. G. Siraisi, *Avicenna in Renaissance Italy: the Canon and Medical Teaching in Italian Universities after 1500* (Princeton: Princeton University Press, 1987) and N. G. Siraisi, *Medicine and the Italian universities 1250–1600* (Leiden: Brill, 2001). The main authority on Pietro's influence on the long Aristotelian tradition in Padua is B. Nardi. See, for example, "La teoria dell'anima e la generazione delle forme secondo Pietro d'Abano" in B. Nardi, *Saggi sull'aristotelismo Padovanno dal secolo XIV al XVI* (Firenze: G. C. Sansoni – editore, 1958).

[5] See C. Burnett, "Hearing and Music in Book XI of Pietro d'Abano's *Expositio Problematum Aristotelis*" in N. van Deusen (ed.), *Tradition and Ecstasy: The Agony of the Fourteenth Century* (Ottawa: The Institute of Mediaeval Music, 1997), 153. The so-called *Problemata* of Aristotle was in the Middle Ages thought to be a work by Aristotle himself.

2 On Touch and Taste

I have chosen to treat the senses of touch and taste in the same section,[6] since they are, as Aristotle says in *De anima* II.11, the two contact senses, and, as he adds in *De sensu et sensato* 2 (438b30–429a13), taste is a particular form of touch, but the main reason is that Pietro says very little about taste.

In Aristotle's discussion of touch in *De anima* II.11, mainly two problems occupy him, namely the problem whether there are many senses of touch or only one, and the problem whether flesh is the organ or the medium of touch. His solutions to these problems are first of all that there is one organ of touch which is within the sensing animal and that the flesh is only the medium of touch and not the organ.

It is very important for Aristotle to argue that also touch, and for that matter taste as well, has a medium in the same way as smell, hearing and vision have a medium. This is particularly important since in II.12 he will go on and argue that a general criterion for perception is that it is the reception of forms without matter. If this is to be a general criterion there needs to be a medium between the sense and the object of the sense – something that separates them. In the case of the two contact senses, the medium will have to be the flesh.

Differentia 42 of the *Conciliator* has the title: "Whether flesh is the organ of touch",[7] and in it Pietro is occupied with the same problems as Aristotle in *De anima*. In Pietro's time the discussion had become somewhat more complicated, however, since the notion of nerves was introduced into the medical tradition after Aristotle, and as Averroes admits, Aristotle seems not to have known about the nerves.[8] Pietro's problem in *differentia* 42 consists to a large extent in an attempt to reconcile Aristotle with the medical discussions after Aristotle.

In *De sensu et sensato* 2 (439a1), Aristotle writes that "the sensory organ of both touch and taste is closely related to the heart." Pietro maintains Aristotle's view and associates both touch and taste with the heart, but he wants to supplement Aristotle's position with the new discoveries, for example with the notion of the nerves. He stresses that the subject of sensation is one and not many, and that it is united in the nerves and the heart.[9] He is concerned to show that not only the nerves can be the

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[6] See also Hasse (2001) for a discussion of touch in Pietro's *Conciliator*.

[7] "Quod caro sit organum tactus" (*Conciliator*, d. 42, f. 59^{vb}).

[8] "Licet iste sermo sit contrarius sermoni in libro De animalibus; sed tamen forte ille sermo fuit secundum quod apparuit illic, scilicet quod scivit de membris animalium in illo tempore; tunc enim adhuc nesciebat nervos, et dixit quod instrumentum istius sensus est caro. Et iste sermo dat instrumenta esse illis animalibus tangibilibus intra carnem, et hoc convenit ei quod post apparuit per anatomiam, scilicet quod nervi habent introitum in tactu et motu. Quod igitur scivit Aristoteles ratione apparuit post sensu." (Averroes, *Commentarium magnum in Aristotelis De anima libros*, II, 108, 66–74; 298). For a general discussion about the medical background to Hellenistic discussions of perception see J. Annas, *Hellenistic Philosophy of Mind* (Berkeley: University of California Press, 1992), 17–33, and see J. Rocca, *Galen on the Brain: Anatomical Knowledge and Physiological Speculation in the Second Century AD* (Leiden: Brill, 2004) for a discussion of Galen on nerves and sensation.

[9] "Prius autem unus tamen cum eius subiectum sit unicum, cor videlicet aut nervus." (*Conciliator*, d. 42, f. 60^{rb}.)

organs of touch, since the nerves run throughout the whole body and there would not be a center or subject of experience if not also the heart would be involved. The sense of touch is in this way several senses in one – "a consideration that Alexander and Themistius choose to ignore."[10]

Neither flesh nor the nerves are the organs of touch, however. Flesh is the medium of sensation, as Aristotle had maintained, argues Pietro, and the nerves are only one part of the story of the sensation of touch.[11] The nerves run through the whole body and its flesh. An apprehension of a touch occurs when something alters the skin and the flesh of the body (this is the same for the whole body and it is presumably, although Pietro does not mention it, a taste when the tongue is altered). The alteration of the flesh is picked up by the nerves and is then transmitted through the nerves by the animal spirits.[12] The nerves in turn lead to the heart which, as Aristotle had maintained, is the central sense organ of touch and taste. It is thus the primary organ of touch, while the secondary organ is the nerves.[13]

3 On Smell

In *differentia* 155 of the *Conciliator*, Pietro treats smell.[14] After having gone thought a long list of different views and discussions about smell, he starts his own treatment of the issue by claiming that almost all of the ancients held that smell is steaming or fuming evaporation (*fumalis evaporatio*). According to Pietro, many modern authors have since then argued that this was also Aristotle's view, but this is not quite true, he argues. Aristotle in fact presents a counter-example to this view, since he asks if smell then is in water for fishes. A fume or an evaporation is a passion of earth and air, but not of water, argues Pietro, hence smell cannot be fuming evaporation. It must be something else.[15]

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[10] "Veritas tamen est quod sensus tactus sunt plures sensus uno; licet huius rationem visi sint ignorare Alexander et Themistius." (Ibid., f. 60^{vb}.)

[11] "Caro igitur est medium et non organum. Quod autem neque nervus sit organum tactus monstratur ex primo de anima." (Ibid., f. 59^{vb}.)

[12] "Tactus enim vis ordinata in nervis cutis totius corporis et eius carnibus ad apprehendendum id quod tangit illud et afficit contrarietatem permutantem complicationem et affectionem compositionis, unde Algazel: Tactus est virtus diffusa per omnem cutem et carnem mediante corpore subtili quod est vehiculum quod spiritus dicitur et discurrit per compagines nervorum quibus mediantibus ad partes cutis pertingit et carnis, quod satis commentator innuit secundo de anima." (Ibid, f. 60va.)

[13] "Immo esset forma secundum aliquod cum animal esse habeat per ipsum et hec fortassis Aristotelis sentit, cum dixit organum primum tactus fore quod intus, unde Aristoteles ut apperuit carnem posuit cordis per se sentire." (Ibid., f. 64ra). For the same point see Hasse (2001), 643.

[14] The exact title of the *differentia* is: "Quod odor curet tantum alterando et non solum alendo." (*Conciliator*, d. 155, f. 206ra.)

[15] "Nosce si quidem antiquores communiter dixisse quod odor sit fumalis evaporatio. Quod mirandum eo quod adhuc id plurimi Aristotelis attribuunt modernorum, cum tamen idem impugnet inquens quod odorare fit animalibus in aqua ut piscibus, et aere ut aliis. Fumalis vero evaporatio est passio terrae et aeris et non aqua. Non igitur secundum hoc odorarent aquatica cum huiusmodi fumalis evaporatio non possit esse in ipsa, cuius passio est vapor." (Ibid., f. 206^{rb}). In *De anima*

One can, further, not say that smell flows from whatever object it comes from, since flowing is properly said only of water and not of air. Smell must be something else that can be said to be common to water and air, and in fact something that can be common to all four basic elements. Pietro therefore ends up with the following definition of smell, namely that it is a spreading evaporation or an emanation.[16]

In the *Problemata*, he gives the same kind of defence of Aristotle, but there the charge is that Aristotle did not hold smell to be corporeal, but fuming evaporations, which furthermore are said to be spiritual. This is not Aristotle's view, according to Pietro, but Plato's and his followers. Aristotle has in fact proved that this position is false, and even though he agrees in this work that smell is some kind of fume, these fumes are corporeal.[17] It seems to me that one must assume from this that these spreading evaporations mentioned in the *Conciliator* are also corporeal.

Following Aristotle in *De sensu et sensato* 5, Pietro argues that there are two kinds of smell, namely objects that are essentially or *per se* smelly as for example when an object *has* a delightful or revolting smell, and accidentally (*per accidens*) similar to a taste, that is, when an object is talked about as being delightful or revolting based on its smell.[18]

This distinction seems primarily to be a distinction between how objects are and how they are taken to be. An object either is delightful or revolting in itself, or it can also be taken to be delightful or revolting independent of how it actually is in itself. Pietro goes on to contrast it with a discussion found in Averroes' *De anima* commentary where it is explained that colour should be taken in two ways, namely either as something natural in the object being coloured or as something in the medium between the perceiver and the perceived.[19] It seems to me that this is

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II.9, Aristotle argues that also fishes have a sense of smell and that the medium of smell is either air or water.

[16] "Neque etiam potest dici quod sit effluxio quadam odor, quia tunc non conveniret aeri, sed aqua soli. Sed dico quod si reperiatur quod commune aquae et aeri quod tunc erit secundum hanc impugnationem Aristotelis descriptio conveniens odoris, ut dicatur: Odor est vaporosa diffusio sive emanatio." (Ibid.)

[17] "Dubitatur de eo, quod dicit Aristoteles: Odor non corporeus, cum odor sit fumalis evaporatio sicut dicitur in De sensu et sensato, et tale sit quid corporeum. Dicendum quod huius predicatio non est essentialis sed causalis. Potius est enim ipsius sensus talis idest odor causatur ex fumali evaporatione. Vel dicendum est quod non intelligit Aristoteles quod ista fumalis evaporatio vel vaporalis fumatio in qua est odor non sit corpus sed est spirituale subtile per relationem ad grossa corpulenta. Dicendum est etiam et melius quod illa notificatio odoris non est secundum opinionem Aristotelem, sed potius platonicorum et ipsam subsequenter improbat Aristoteles in eodem libro propter quod mirandum quod plurimi hanc sumuntur notificationem odoris ac si esset secundum mentem Aristotelis cum tamen ipse eam impugnat." (*Problemata*, p. 48, f. 31^{ra-b}.)

[18] "Odorum vero species est duplex. Una quidem per se ut dicitur odor suavis et fetidus seu iocundus aut horribilis sicut quae florum et cadaverum, vel per accidens et similitudine ad sapores, sicut dicitur delectabilis aut tristabilis secundum quod sic aut aliter fuerit affectus alimento dicitur et dulcis amarus et reliquus." (*Conciliator*, d. 155, f. 206^{rb}.)

[19] "Notandum quoque iuxta commentatorem 2 de anima, quod sicut color habet duplex esse, unum in corpore terminato seu colorato, quod sibi est naturale et aliud esse in medio vel diaphano quod est eius extraneum. Ita et odor; habet enim esse in humido separabili seu corpore odorabili, quod est ei esse corporale et naturale." (Ibid.)

not the same kind of distinction, since the first one is an epistemological distinction between how things are and how they appear, while the other one is a metaphysical distinction between two ways for something to be or exist.

If these distinctions are combined with each other, as Pietro seems to suggest that they should be, then an interesting philosophical problem becomes apparent. If objects are in themselves (*per se*) smelly and in the medium the smell is only there in a referred or accidental way, then we do not sense objects in themselves, since we only sense the smell via the medium. There seems thus to be an epistemological gap between the qualities of the objects and the subject sensing these qualities. This is a somewhat different but clearly related epistemological problem than the modern or seventeenth century concerned with this problem of the subjectivity of secondary qualities.

Pietro does not seem to be concerned with these problems, however. Instead, he goes on to talk about smell as a species in the medium. He then adds that what is in the medium is there spiritually and should be seen as external to the object in which it inheres naturally. He wants to add to this that the species in the medium should be taken in two different ways as well. In one way the accident is there spiritually or intentionally, but in another way it is there naturally, since the smell is literally in the air. Smell is corporeal, because it lingers around informing the particles of the air, but, as Aristotle says in the *De anima* II.12, sensation occurs when the sense organ takes on the form of the object without its matter. Smell is in this way much more like touch or taste than sight or hearing in which several opposing intentions can be perceived in the same medium at the same time at the same place.[20]

Pietro then ends his discussion with some remarks about the anatomy of perception and how the species travels through the nose via the nerves to the common sense in the brain. He also mentions other issues related to smell and of interest to a practical physician; for example, how smell works together with taste and how it helps nourishment. In this connection he enters on a complicated discussion about the role of the animal spirits and how they are affected by the smelly evaporations through the lungs and then somehow through them have a nourishing effect.

[20] "Reliquum vero in medio quod est spirituale ac extraneum. Subdo etiam quod in medio habet duplex esse quorum unum est reale sive naturale, cum medium non extiterit multum, fuerit que odorabile in vaporosa emanatione non parua seu quod est evaporosum valde subtile aereum, aut super prunas proiectum si corpus eius fuerit conterminatum. Cum autem medium fuerit amplissimum, aut odorabile non tale secundum alterum extremorum, ut versus organum intentionaliter seu spiritualiter extat tamen ut tactum differentia 141. Affero etiam quod medio quocunque modo aut odorabili existente odor ad organum eius intentionaliter pervenit solum cum sensus sit susceptuus specierum sine materia; 2 de anima unde totidem de anima Aristotelis. Sentire est recipere formam rei nudam absque materia eademque informari. Haec tamen intentio materialis fere ac velut corpora respectu spiritualitatis coloris, et maxime in medio et soni accedens ad naturam tactus et gustus, quod ostendit eo quod plures et contrariae intentiones visibiles possint percipi in eodem simul medio et aliqualiter soni, non sic odorabiles." (Ibid.)

4 On Hearing

Hearing is not dealt with explicitly in the *Conciliator*. To find a treatment of the sense of hearing by Pietro we have to turn to the *Problemata*.[21] The discussion of hearing is in the context of a discussion of music. Music is, however, also discussed in the *Conciliator*,[22] but the philosophical or medical issues related to hearing are not mentioned there. In general, he does not give a satisfactory account of hearing. He only hints at what his view is.

In Book XI, problem 1, Pietro defines sound as "a passion or accident resulting from the motion of air caused by the collision of bodies."[23] What he means by saying that sound is a passion is that is something passive, which occur when two hard bodies collide. There are thus three things needed to produce a sound, namely something striking, something being struck and a medium. It is of course important that both that which is struck and that which strikes are hard bodies, since if one is soft no sound will be produced.[24]

The medium is divided into an outer and an inner medium. It is the outer medium that is either air or water in which the colliding of hard bodies occur, that is, it is the medium between the objects colliding and the ear. The inner medium is in the ear between "the stone-like bones" to which the fifth pair of nerves are connected. This medium is air and if the ear was to be filled with water no hearing would be possible. One can thus say that air is the primary medium of sound and necessary for hearing to take place. The nerve between the ear and the brain is, as he says, the organ and cause of hearing.[25]

The two bones mentioned by Pietro in this connection are supposed to pick up the vibrations in the air. The external medium transports the sound to the ear of

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[21] Pietro's discussion of hearing in his *Problemata* has been discussed in C. Burnett, "Sound and its Perception in the Middle Ages" in C. Burnett, M. Fend and P. Gouk (eds.), *The Second Sense: Studies in Hearing and Musical Judgment from Antiquity to the Seventeenth Century* (London: The Warburg Institute, 1991), 43–69 and "Hearing and Music in Book XI of Pietro d'Abano's *Expositio Problematum Aristotelis*", 153–190. His 1997 paper also contains an edition of the relevant passages from the *Problemata*. My references will foremost be to this edition.

[22] See N. G. Siraisi, "The Music of Pulse in the Writings of Italian Academic Physicians (Fourteenth and Fifteenth Centuries)", *Speculum* 50:4 (1975), 689–710 for a discussion of music in the context of the *Conciliator*.

[23] "Est autem sonus passio vel accidens ex motione aeris causata collisione corporum solidorum auditu proprie percepta, sicut potest colligi ex secundo De anima et secundo Sexti naturalium Avicennae." (Burnett 1997, 166.)

[24] "Sciendum tamen breviter ex illis ad sonum tria requiri, scilicet verberans, quod verberatur, medium. Verberans quidem et quod verberatur oportet corpora esse solida propter quod pili et lanae cum invicem percutiuntur aut et si percutiantur solido corpore vel econverso, non causant sonum." (Ibid.)

[25] "Oportet et tertium ex hiis duobus adesse, scilicet medium in quo verberans verberatum attingat. Hoc autem est duplex, scilicet extrinsecum, quod proprie est aer, cum auditus sit connaturalis aeri, et etiam aqua; et intrinsecum, quod quidem est aer connaturalis complanatus in foramine auris quod est ossae utroque petroso ad quod dirigitur quintum par nervorum, quod est organum et causa auditus, sicut apparet in nono De iuvamentis membrorum." (Ibid., 167). The reference at the end is to Galen's *De usu partium* IX.10.

the hearer and it is then taken on by the air in the internal medium. This sound or the movement of the air in the ear is picked up by the bones in the ear and they then transmit the sound to the nerve. He never explains the process that goes on from the bones to the nerve and how the sensation ends up in the brain where the nerve is connected. In the *Problemata*, he is much more interested in the physical process and very little with the anatomical and philosophical aspects of hearing.

5 On Vision

The main discussion of vision in the *Conciliator* is in *differentia* 64. The question posed in the beginning is whether vision in created by extramission or intromission.[26] Naturally, being an Aristotelian and a follower of Avicenna, Pietro resolves the question in favour of the intromissionists. He does so in his own peculiar way by mixing elements from the perspectivists and the Aristotelian *De anima* commentators in the late thirteenth century with discussions of anatomy and medicine.

In his discussion of vision, it is apparent that he adheres to a faculty psychology similar to Avicenna's, and also like in Avicenna the seat of visual sensation is in the brain. The head, which is the seat of the brain, is the most noble part of animals.[27] The brain is humid and therefore particularly suited to take on the sensible forms mediated through the transparent eye, which is filled with a water like fluid. The brain is therefore the proper subject of the sensation of sight, hearing and smelling. These all involve the taking on of a sensible form and this works much better if the receptor is cold and humid, he claims.[28]

Vision is a movement in the eye in conformity with the translucent medium or the diaphanous in the eye. A species of light (*lumen*) or colour is mediated through the pupil and received in the eye.[29] As Avicenna and the perspectivists, Pietro uses

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[26] He puts it in the following way: "Quod visus fiat extramittendo et non intus suscipiendo ostenditur auctoritatibus quam multis." (*Conciliator*, d. 64, f. 90^{vb}.)

[27] "Propter primum quidem sciendum quod caput iuxta Timaeum est praeter caeterum corpus honoratius optimati quadam eminentia cui reliqua membra dominanti parent, atque obsequuntur iure meritoque subiecta." (Ibid., d. 40, f. 58ra.)

[28] "Quod autem tertio caput et cerebrum sint oculorum subiecta sentitur De partibus secundo. Auditus quidem et visus maxime in capite et horum visus omnibus, quia pisces et huiusmodi audiunt et odorant. Nullum tamen sensitivum invenitur in capite manifeste, sed visus omnibus habentibus rationabiliter est circa cerebrum. Quod probat quia oculus est de natura aquae, De sensu et sensato, et quinto De generatione animalium. Cerebrum autem est huiusmodi cum sit frigidum et humidum. Adhuc oculus debet esse diaphanus sufficienter ut recipiat colorum species et conservet, tales quidem aqua reddit ceteris magis elementis, sed cerebrum est huiusmodi. Amplius si oculi non reperiuntur absque capite et cerebro. Haec autem sine illis ea non propter oculos creavit sed potius e converso." (Ibid., f. 58va.)

[29] "Propter primum quidem, quia visio est medii luce mediante per pupillam speciei coloris susceptio... Visio est oculi motus secundum quod diaphanum. Sciendum quid sit pupilla, quid lux et color ac istis comparia." (Ibid., d. 64, f. 91^{rb}.)

the distinction between luminosity (*lux*) and colours that reside in the respective luminous bodies and the light (*lumen*) and the colour in the medium or of the multiplying bodies.[30] Although, as most Latin followers of Avicenna, he is not consistent in his use of this distinction.

He stresses, before going in to a detailed and almost mechanical explanation of the eye, that the eye is the instrument of seeing. His account of the anatomy of visual perception is very similar although not identical to that of the perspectivists, which in turn, of course, rely heavily on Avicenna's account in the *Cure* – the part that became known as Avicenna's *De anima* in the Middle Ages – and the *Canon*. I will not go into detail about Pietro's discussion of the anatomy of the eye. It can be read in Avicenna or in Bacon's *Perspectiva*. I will only here utter some minor points about it.

Pietro relies heavily on authority, which he himself admits. He explains that the eye has seven tunics, which is one more than we find in Bacon,[31] and three humours. There are furthermore six muscles that control the movement of the eye. From the anterior ventricle of the brain where the common sense and the *phantasia* faculties are located there proceed two optic nerves. Sometimes he says that the right nerve goes to the right eye and the left to the left eye, but sometimes he corrects this and says that the right nerve goes to the left eye and vice versa. Avicenna and Bacon of course held the latter view, but Pietro is not consistent, which probably reflects his sources.[32]

The reason Pietro talks about seven tunics is because he views the web – sometimes called the "spider's web" – that surrounds the crystalline and vitreous humours of the eye as a tunic. Bacon had earlier in the thirteenth century rejected this view.[33] One of the three humours of the eye is, starting from the back of the eye, the vitreous humour, which is also the humour in the nerve. In front of it is the crystalline humour, and in the front part of the eye filling the aperture in the uvea (our pupil) and extending to the cornea is the albugineous humour. These humours are all transparent to different degrees so that the species will have free passage through them

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[30] "Est autem lux actus sive perfectio diaphani secundum quod diaphanum secundo de anima. Est et illud quo fit umbra in corpore opaco, unde tertio Sexti naturalium, est qualitas que ex sua essentia perfectio est translucentis secundum quod translucens. Lumen vero est qualitas quam corpus non translucens mutuat a lucido, et efficitur ea translucens actu. Differt enim a luce quia lux est in corpore per se lucido ut sole vel igne. Lumen vero receptum ex ipsa in medio. Est enim corporis habentis lucem." (Ibid., fol. 91^{vb}.) See also Hasse (2001), 648–649, for a discussion of Pietro's inconsistent use of *lumen*, which according to Hasse is a reflection of the inconsistent usage in the thirteenth century commentary tradition.

[31] See the description of Bacon's view in D. C. Lindberg, *Roger Bacon and the Origins of* Perspectiva *in the Middle Ages* (Oxford: Clarendon Press, 1996), lxxi.

[32] "Ex septem tunicis et tribus humoris constitutum, sex musculis motum et uno vel duobus seu tribus fultum. Particularem autem oculi compositionem scribunt medici et perspectivi. Dicunt namque quod ex cerebro duo progrediuntur nervi soli intro ipsos concavi, quarto de accidenti, cap. 2, qui ante cranei egressionem cruciantur cum reversione tandem dextri ad dextrum, sinistrique ad sinistrum, ut unum sit deferens." (*Conciliator*, d. 64, f. 91^{rb}.) See f. 91va for the contradictory statement that the right nerve leads to the left eye and vice versa.

[33] See Lindberg (1996), lxxii.

all the way to the common nerve and the brain. As it is said in Aristotle's *De anima*, the eye takes on the species or form of colour but not colour itself, Pietro stresses. The visual process starts by the alteration of the crystalline humour and ends by the species entering the common nerve and the common sense where a perceptual judgement if formed.[34] Pietro has lots more to say about the anatomy of the eye and how the different tunics and humours function and work to facilitate vision, but I will not say more about it, mainly because he is simply repeating what is in Avicenna and Bacon. I will instead turn to his discussion of species and his rejection of the extramissionist theory of vision.

Although Pietro draws heavily on Avicenna and the perspectivists he is at bottom an Aristotelian. This is nowhere more apparent than in his discussion of the intromissionist theory of vision. It is the opinion of Aristotle and all other Peripatetics, according to Pietro, that colours multiply intentionally or spiritually through the medium, that is, either air or water.[35] The colour or the light (*lumen*) are intentional species in the medium of the real colour or luminosity (*lux*) in objects seen. These species are taken on by the transparent humours of the eye and the nerves and transported into the common sense. There are different grades of spirituality, according to Pietro. He outlines the following four:

(i) Spirituality in material objects,
(ii) Spirituality in the common sense,
(iii) Spirituality in the estimative faculty,
(iv) Spirituality in the intellect (universality).[36]

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[34] "Postquam ex nervo sequestratur alius panniculus piematri compar qui secundina nominatur, et super priorem locatur. Et demum nervus anterius producitur in crystallinum cuius quidem substantia in panniculum dilatata tunicam constituit locatam super priores retinam dictam. In cuius capacitate humor locatur vitreus vitro similis liquefacto. Ante vero hunc crystallinus vel glacialis situatur humor. Super quem tunica ponitur aranea dicta tela ut inter principale et secundarium ac nutritum et eius superfluum distinguat. Crystallinus enim nutritur ex vitreo, ipsiusque superfluitas albugineus extat, et ipsa quidem hemispericae anterius extensa oritur ex retina, postquam humor locatur albugineus albugini ovi comparatus. Deinceps tunica dicta est uvea colori uvae cum coloratur simillima, que oritur a secundina perforata ens, cuius foramen est pupilla ne ipsius colore prohibeatur vivendi actus. Est namque receptivum coloris quod sine colore, soni vero assonum, secundo De anima." (*Conciliator*, d. 64, f. 91$^{rb\text{-}va}$.)

[35] "Propter tertium autem sciendum quod Aristotelis sententia et aliorum peripatheticorum est quod color intentionaliter seu spiritualiter multiplicet speciem suam in medio lumine affectus ceu aere vel aqua. Hic autem illam susceptam defert oculo. Aer etenim mediante lumine recipit prius species rerum, deinde reddit ipsas reti extrinseco ut corneae, et hic reddit eas donec earum motus ad ultimum perveniat retis, in medio quoque istorum retium humor extat grandinosus speciem coloris comprehendens et diiudicans, et est quasi medium obtinens inter naturam aeris et aquae." (Ibid., f. 92ra.)

[36] "Est namque natura eius his duabus communis naturis. Ab hinc namque per nervos opticos species defertur sensui communi ubi haec spiritualior reddit. Formae namque habent tres vel quattuor ordines sui gradus. Unus quorum est materialis et est quem servant in natura; alius in sensu communi et est spiritualis; tertius est hoc spiritualior magis in virtute factus aestimativa; et tandem spirituatur deinceps amplius donec in intellectum simpliciter spiritualem et universalem deducatur." (Ibid.)

The spirituality a quality (colour or light) has in the medium is obviously the first one. As soon as it enters the soul it becomes more spiritual. (ii–iv) are all degrees of spirituality in the soul. It is very difficult to see exactly what this means for the species in the medium. It seems to me that he holds a dualistic view here as well (as he did of smell), namely that the species continuously informs spiritually or intentionally a material medium and multiplies in that way to the eye where it is taken on by another material substance.

The main part of *differentia* 64 is devoted to proving that an extramissionist theory of vision is impossible. He goes about doing this by showing that such a theory cannot give a plausible account of the connection between perceiver and perceived, which is a necessary requisite for a theory of perception.[37] He does this by showing that several different possible ways of establishing such a connection will fail.

None of the arguments Pietro presents are new to him – they can all be found in different works of Avicenna except perhaps the second which Pietro attributes to Averroes. Even though this part of *differentia* 64 is divided into four counter arguments there are not only four arguments developed. He groups together arguments as one that are separated by Avicenna. He is also not as careful as Avicenna to explicate what kind of extramission theory of vision he is arguing against, and sometimes his arguments are, without lots of background knowledge, quite unintelligible.[38]

The first three groups of arguments seem to be aimed at a version of the extramission theory that sometimes is attributed to Euclid, but which – although with great sophistication – also was defended by Al-Kindi. It claims that a corporeal substance is emanating from the eye either as a single homogenous conical body or as separate rays which account for the connection between the perceived object and the eye.

Pietro's first set of arguments is directed at the more crude version of the theory that claims that a single homogenous cone is in continuous contact with the whole objects during the perception. He points out that this will be a huge corporeal substance emanating from the eye, particularly since it will have to be able to reach as far as the fixed stars, which is physically very implausible. The second argument developed in this first group targets the claim that the cone is in contact with the whole object perceived. If this is so, then the remoteness of the object should not affect its apparent size and shape, but this is obviously contrary to fact.[39]

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[37] "Si ergo quidem corpora tangendo alia vero non nemo potest probare hoc esse impossibile propter distantiam et situm quae est inter duo corpora unum in aliud sine ostensione operari." (Ibid., f. 92va.)

[38] See D. C. Lindberg, "The Intromission-Extramission Controversy in Islamic Visual Theory: Alkindi versus Avicenna" in P. K. Machamer and R. G. Turnbull (eds.) *Studies in Perception: Interrelations in History of Philosophy and Science* (Columbus: Ohio University Press, 1978), 137–160 for a detailed discussion of Avicenna's arguments against the extramission theory of vision.

[39] "Primum quidem esse non potest, quia cum infinitis fere vicibus die etiam una possumus ad libitum oculum aperire, claudere et reaperire stellas inspiciendo; si oculus ut orbis foret magnus haberet inanimari et dissolui. Neque etiam potes dicere quod cum oculus clauditur quod

The second argument is somewhat long, but it seems directed at the same kind of extramission theory as the first group of arguments. It has to do with the fact that all bodies move in time and it will hence take some time for such a large body as the one emitted from the eye to travel as far as the fixed stars. Perception is however instant. As soon as I open my eyes I see the stars – even if I open them just for a moment. There seem not to be enough time for such a large body to travel that far.

The third argument is directed at the version of the extramission theory that maintains that the substance issuing from the eye consists of rays. This version of course escapes the problems just raised, but it has even bigger problems according to Pietro and Avicenna. Rays perceive only what they encounter, which means that the perceiver will perceive spots where the rays fall and will hence only perceive parts of a body. The only way of getting around this is to say that the rays use the medium between the rays by endowing it with the power of perception by changing it into its own nature. But this is absurd, argues Pietro; what should we say when we perceive the heaven? Does it change into the nature of the rays and become sentient as if it was one thing "so that it touches the stars of Saturn and Jupiter and sees the whole of it."

The theory that this last argument seems to be directed at is a somewhat different extramission theory of vision. It is often attributed to Galen and Pietro seems also to think that it was defended by him. According to this view, the ray issuing from the eye does not itself perceive the object, but employs the intervening medium as its instrument. It can do this either by rendering the medium capable of transmitting visual impressions to the eye or by converting it to a visual organ. Pietro dismisses both of these. The latter view is impossible because any disturbance of the medium would immediately distort vision. Furthermore, if air is altered as to possess sensibility, then there are lots of things that we would not see, since air does not touch everything seen – for example the fixed stars. The first view is equally implausible since it remains utterly unclear what kind of alteration the visual power transfers to the medium.

The arguments stated by Pietro refute the two main extramission theories of vision. As I have stressed they are all except one taken from Avicenna and in that sense Pietro is not very original, but considering his later influence he can certainly be said to have contributed to paving the way for intromission theories of perception.

6 Conclusions

There are very few treatises like Pietro's *Conciliator* in medieval times, and, it seems to me, there are very few works of this kind in the whole history of thought. It is an attempt to combine philosophy with science and medicine. It is this aim that makes it one of the most important works in later medieval times.

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emissum est ab eo regrediatur in ipsum cum nihil talem sit possibile facere reductionem. Etiam res quantumcumque eminus enim longe videretur omnino in eadem figura et quantitate sicut prope." (*Conciliator*, d. 64, f. 92^{rb}.)

It is also a very eclectic work, which, at least as far as sensation and perception are concerned, depends heavily not only on the medical tradition, but also on the commentary tradition on Aristotle's *De anima*.[40] The commentary tradition, at least in the thirteenth century, does not as a whole give a coherent account of Aristotle's text. It is very much a divided tradition, and this also shows in Pietro's presentation of sensation and perception.

However, I think that there is an attempt in Pietro's work to present a unified account or a theory of sensation and perception, which takes into account aspect from philosophy, physiology and anatomy. First of all, sensation is a passive process, according to Pietro. The agent is not active in sensation – the world instead acts on it. In touch and taste, something alters the skin or flesh; in smell, air informed by species effects our sense organ through our breathing; in hearing, a sound, which is a movement of the air, effects parts of the ear; and, in vision, a visual species effects the eye. Secondly, all sensation is through a medium. Thirdly, sensation involves species or sensible qualities. Fourthly, nerves are involved in sensation together with a central organ of sensation, which is either the heart or the brain. Fifthly, perception is an awareness or perceptual judgment in the soul.

Pietro does not say much about the soul or the mind in the *Conciliator*. It is only in relation to his discussion of vision that he indicates that he is an adherent to Avicenna's faculty psychology.[41] It is also there that he reveals that he does not think, as the inquisition accused him of, that the soul is educed from the potency of matter. The soul is a spiritual substance and quite independent of the material body. In the process from the object sensed through the sensation to the perceptual judgment there is a gradual dematerialisation or spiritualisation of the perceptual object. He does not, however, say anything about this process, and he as a consequence opens himself to some serious epistemological and metaphysical problems.

The present study aimed at giving an account of Pietro's discussions of sensation and perception, but all it has managed to do, I think, is to show that much more needs to be said. If one would try to see later fourteenth century developments in psychology in the light of Pietro's treatise, then very interesting perspectives open up, particularly in relation to John Buridan, but this is a topic of another paper.

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[40] See Hasse (2001) for a discussion of Pietro's dependence on this commentary tradition.

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Id Quo Cognoscimus

Robert Pasnau

In a book published eleven years ago, I defended a thesis about Thomas Aquinas's theory of cognition that has not been widely accepted. My claim was that, despite Aquinas's apparent statements to the contrary, he actually does conceive of sensible and intelligible species as in a way the objects of cognition. I acknowledged that Aquinas does believe it is the external world we perceive and think about, in normal cases, rather than our mental images or ideas. In this sense, Aquinas is a *realist* about cognition. Nevertheless, I maintained that he is a kind of *representational* realist, inasmuch as we come to apprehend external things – to perceive them and think about them – in virtue of grasping an internal representation of those things.

I said that this thesis has not been widely accepted. Alas, it has not even been *narrowly* accepted – unless one counts the sole, limiting case of myself. This is to say that, so far as I know, *no one else* has been persuaded that this reading of Aquinas is correct. A better man would at this point conclude he is wrong, but I (again alas) am not that man, and so I must confess to remaining persuaded of my original thesis. Still, I am not here going to offer further arguments for that thesis, or even recite the original arguments.[1] Instead, I want to step back from the case of Aquinas and consider more generally the philosophical issues at stake in the Aristotelian idea that forms – that is, *species* – can be used to explain mental representation. I believe it is not generally recognized just how perplexing and problematic an idea this is, and that the reason for our failure is that we do not have a very clear sense in general of what forms are and how they relate to their subject. The thesis of this paper is that, once we reach a clear sense of the different things a form might be, we are forced to make various hard choices about how to understand species in cognition.

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[1] I think the original arguments remain persuasive in R. Pasnau *Theories of Cognition in the Later Middle Ages* (Cambridge: Cambridge University Press, 1997), Ch. 6, despite criticisms from various sides, especially as found in D. Perler "Essentialism and Direct Realism. Some Late Medieval Perspectives", *Topoi* 19 (2000), 111–122; idem, *Theorien der Intentionalität im Mittelalter* (Frankfurt: Klostermann, 2002) and J. O'Callaghan, *Thomist Realism and the Linguistic Turn: Toward a More Perfect Form of Existence* (Notre Dame: University of Notre Dame Press, 2003).

S. Knuuttila, P. Kärkkäinen (eds.), *Theories of Perception in Medieval and Early Modern Philosophy,*

1 Three Models of Species in Cognition

I will begin by describing three theories about the relationship between a species and the cognitive power that it informs. A first view, which I will call the *adjectival model of species*, treats the species not as something wholly distinct from the cognitive power, but as something adjectival on that power. This means that, for instance, when sight goes from not seeing anything to seeing a red fire truck, the species is not something extrinsic that makes the power of sight see, but is instead that intrinsic feature of sight in virtue of which it is now seeing a red truck. On this view, as I will understand it, the species is not the *action* of seeing. Someone might want to treat species in that way, but I think it best to leave action as a distinct category to be either embraced as ontologically distinct or reduced to something else. The species is also not a characteristic of the action, as an *adverbial theory* would have it. Rather, the species is a modification of the cognitive power. It is, for instance, that state of the cognitive power that makes it be presently seeing a red fire truck. If reductive materialism is true for any cognitive power, then the species of that power will be what the neuroscientist discovers about what precise state the brain is in when φ-ing – those features of the brain that constitute being in a mental state such as to φ. More generally, whether or not materialism is true, the species will be that specific cognitive state that is responsible not only for the cognitive power's operating as opposed to not operating, but also for its apprehending x rather than something else – e.g., its seeing a red fire truck. In this sense, the species is what explains the intentionality of a mental state.[2]

The adjectival model raises puzzling questions of ontology. Is a species, so conceived, a universal or a particular? Is it something ontologically distinct from the cognitive power, and if so exactly how? For now, let us set aside questions of this sort and focus on the model's implications for cognition. As should be obvious, this conception of species is conducive to direct realism. When a species is conceived of as the intrinsic state of a cognitive power, it is not just implausible but downright incoherent to treat it as the immediate object of cognition. Although a state so conceived might in principle be the object of some other cognitive act – via first-person introspection, say, or the third-person investigation of a neuroscientist – it simply cannot be its own object. A species so described does not come into existence until the moment when the cognitive power is actualized. But the object must surely be something that contributes to the power's actualization, and so something prior to both the actualization and the species.

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[2] I describe this conception of species in Pasnau (1997), 189–194. This seems to be the view taken by O'Callaghan (2003), judging from these remarks: "The *species* as a form must be an intrinsic principle of cognition, and cannot, therefore, be an agent cause of cognition, an extrinsic principle of cognition" (180); ". . . what is lacking in an account like Ockham's that denies *species*, sensible or intelligible, is why diverse cognitive processes and acts have the character they do. Why this process of *mediated* cognition leads to an act of sight rather than an act of smell. Why this act of understanding is an act of understanding a tree rather than a dog" (181). O'Callaghan compares the relationship of cognitive faculty to species to the relationship between a ball and its shape (180–181), and to the relationship between a hand's grasping an object and the shape assumed by that hand (171).

The adjectival model is conducive to direct realism, but it by no means entails it, because even on this conception of species there are other available candidates for the immediate object of cognition, aside from the ultimate object about which we are led to form beliefs (e.g., the fire truck). For even if the sensible or intelligible species is conceived of as nothing other than a state of the cognitive power, this species is still – says the orthodox Aristotelian – just the last in a long line of forms proceeding from that ultimate object to the cognitive power. So, for all that we have said, one of these species *in medio* might be the immediate object of cognition. Now one way to avoid this issue is simply to deny the existence of species *in medio*, in favor of action at a distance. This was the strategy of William Ockham. If, however, forms are allowed as causal intermediaries between the ultimate object and the sensible or intelligible species, then something will need to be said about why a particular remote cause – the red fire truck, say – is the object of cognition rather than one of the more proximate causes in the direction of the cognizer. This was the notorious problem faced in modern times by the causal theory of perception.

In what follows, I will set aside the problem of species *in medio*, since it (or some non-Aristotelian analogue to it) is a problem for any theory of perception that does not accept action at a distance. This will allow us to focus exclusively on the sensible and intelligible species. If we do so focus, then it may seem as if this first view under discussion – the adjectival model – is clearly correct. After all, there was broad consensus among Aristotelians that species are accidental forms. Now to be a form just is to be the actuality of a thing, to be that in virtue of which a thing is what it is or does what it does. But the actuality of a thing seems to be an intrinsic state of that thing. Matters are, however, much more complicated than this. One quick way to see as much is to notice that if this is what species are, then it becomes very hard to see how anyone could deny their existence. To do that would be to deny that our cognitive powers engage in their cognitive acts in virtue of being in a certain cognitive state, a claim that looks positively indefensible. Yet there were many scholastic authors – including first Peter John Olivi, and then later and most prominently William Ockham – who denied both sensible and intelligible species. Moreover, in all the extensive scholastic debates on these topics, I have not found anyone asserting that the existence of species holds true trivially, as it would seem to do if the adjectival thesis is correct. Perhaps that fact was just missed. But this should at least give us cause to wonder about what other accounts of species are available.

A second view about species is the *actualizer model*. According to this account, the species is that which, by informing a cognitive power, makes it enter into a certain cognitive state. This is not to say that the species is the very actuality of the cognitive power – at least not in the sense intended above, according to which the actuality of the power is the cognitive state in virtue of which the power is cognizing in a certain determinate way. Still this model does maintain – as any Aristotelian account of species must – that the species is that in virtue of which the cognitive power operates as it does. Here, however, the "in virtue of" relationship holds at one remove, inasmuch as the species is not the cognitive state itself but that which immediately accounts for a power's being in a certain state.

This second model is not a single determinate account but rather a family of accounts, inasmuch as there are various ways in which the actualization relationship might be understood. According to one strain, the relationship between the form and the cognitive power would be that of efficient cause to effect, meaning that the species' informing a cognitive power would be understood as its causing (in the ordinary, efficient sense) the cognitive power to enter into a certain state. On a second strain, the relationship would be a *sui generis* metaphysical one that obtains only between a form and its subject. This might be understood in various ways, as I will discuss later. What both of these possibilities have in common, though, and what characterizes the actualization account in general, is that the species is conceived of as (a) distinct from the cognitive power and its state of actualization, but (b) related to that power in some sort of noncognitive way, as actualizer to actualized (whatever that turns out to mean).

Models of this second sort seem conducive to direct realism more than to representationalism. For although the species is sharply distinguished from the cognitive power, the relationship between the two is a noncognitive one, giving little encouragement to the idea that the species could serve as an immediate object of cognition. Admittedly, there is on this approach some sort of causal relationship between species and causal power – either a ordinary efficient one, or some sort of special formal one – but that seems of little significance since for the Aristotelian there will *always* be intervening forms of this sort in the medium, unless (as already noted) one wishes to follow Ockham in embracing action at a distance.

This brings us finally to a third account of the relationship between species and cognitive power, the *object model*. On this approach, as with the second, the species is something distinct from the cognitive power and related to it. But now the relationship is in some way cognitive, inasmuch as the cognitive power is actualized and informed by a species in virtue of its somehow *apprehending* the species. The object model is obviously conducive to representationalism, but the proponent of this view need not fall into a full-blown version of that theory on which a species is "whatsoever the Mind perceives in itself, or is the immediate object of Perception, Thought, or Understanding" (Locke, *Essay* II.8). One way to avoid this outcome is to insist that although our cognitive powers do have some kind of cognitive relationship to species, nevertheless it is things in the world that we ordinarily perceive and think about. Since that is what our thoughts and perceptions are immediately about, those external things are the immediate objects of cognition.[3] A second way to avoid full-blown representationalism is to invoke the formal identity of species and object. On this account, although our cognitive powers do in a sense apprehend species, direct realism can nevertheless be maintained, because to apprehend a species is to apprehend a certain form, and that very form is the form of the external object. Hence to apprehend the species just is to apprehend the forms of external things, directly.[4]

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[3] This is the line I ascribe to Aquinas in Pasnau (1997), Ch. 6.

[4] Perler (2000) expressly defends this approach, remarking: "For what is immediately present to the intellect when it apprehends a species *qua* similitude, is the form of a thing – the very same form that is also present in the material thing" (115b). Later (118a), he distinguishes between two senses

We now have three ways of understanding the role of species in cognition, or rather three families of views, each coming in various strains. These are all ways of filling out Aquinas's famous claim that the species is *id quo cognoscimus*[5] – "that by which we cognize" – where the *quo* is an ablative of means that leaves entirely wide open the issue of exactly what role the species plays. However exactly we are to understand the ablative in this phrase, it is clear that it is intended to connect the theory of species to the more general theory of accidental forms. Here is Aquinas's clearest account of how we are to understand the role of species as the *quo* of cognition:

> And so it should be said that an intelligible species is related to the intellect as that by which the intellect thinks (*ut quo intelligit*). This is clear as follows. Action is of two kinds (as is said in *Metaphysics* IX [1050a23–b2]):
>
> - one that remains in the agent, like seeing and thinking;
> - one that passes into external things, like heating and cutting.
>
> Each occurs in virtue of (*secundum*) some form. An action reaching toward an external thing occurs in virtue of a form that is a likeness of the action's object. The heat of the thing heating, for instance, is a likeness of the thing heated. Likewise, an action remaining in the agent occurs in virtue of a form that is a likeness of its object. So the likeness of a visible thing is that in virtue of which sight sees, and the likeness of the thing being thought about, an intelligible species, is the form in virtue of which the intellect thinks. (*ST* 1.85.2c)

Several things are clear from this passage. First, Aquinas does not want to treat species in an entirely *sui generis* way – rather, he thinks we can understand the place of species in cognition by looking at other, perfectly ordinary kinds of action. Second, more specifically, the role of species in cognition is just one case of the broader phenomenon of forms bringing about action. Third, Aquinas holds quite generally that the form in virtue of which an action occurs is a likeness of the object of that action. So the fact that Aquinas stresses the status of species as likenesses should not, all by itself, be taken as evidence for the object model of species. Heat is a likeness of the thing heated, but of course the hot thing does not *apprehend* the heat that is its form.

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of "apprehend," one with a "very strong cognitive connotation" (which he rejects) and another with a "weaker cognitive connotation" (which he accepts). The first treats the species as the immediate object of cognition, but even on the second reading the species is "grasped" in order to cognize something else. Thus Perler's Aquinas is a proponent of the object model. This is an unsurprising result, given Perler's focus on the formal identity of species and external object. As I wrote in my (1997), "the most obvious motive for emphasizing the identity between species and object would seem to be that this allows one to admit that the species is itself apprehended but nevertheless deny that this entails representationalism" (pp. 299–300). In Appendix A of that work I argued against appealing to formal identity as a response to skepticism. I likewise think it a mistake to treat formal identity as yielding direct realism. But I suspect nevertheless that Perler and I are in fairly substantial agreement on how to read Aquinas in this area: we agree that he treats species as a kind of cognitive object, and we agree that the formal identity of species and object is what makes it the case that an apprehension of a certain species yields the perception or thought of an external object with that same form.

[5] See, e.g., *ST* 1.85.2, *SCG* II.75.1550, *In De anima* III.8.239–279, *Quaestio de anima* 2 ad 5, *QDSC* 9 ad 6.

I propose in what follows to take seriously the idea that species are just one kind of accidental form. This suggests that we might better understand the role of species – and perhaps decide which of the above accounts is correct – through a better understanding of the general scholastic theory of forms. If the goal is to understand Aquinas in particular, then it would of course be ideal to look closely at how he conceives of accidental forms. This, however, is not going to be my strategy. Although it would be no doubt interesting to read Aquinas closely on this topic, it seems to me that the issues at stake emerge more clearly in various later authors. One might suspect that some of the obscurity in Aquinas's conception of species is a consequence of some lack of clarity in his broader conception of the relationship between an accidental form and its subject. Even if this were so, it could hardly count as a criticism, because we will see that while the status of accidental forms became a more explicit topic of discussion among later authors, it is hard to find anyone who gives a very lucid account of the relationship between form and subject.

2 The Inherence of Accidental Forms

Scholastics from the fourteenth century on worry about accidental forms in a way that earlier generations do not. Nicholas of Autrécourt, for one, complains that we do not know what it means when we say that an accident inheres in a subject (*Exigit*, p. 194); this issue would continue to occupy scholars up to the end of the scholastic era. It seems plausible to think that Ockham's vigorous attack on the reality of various accidental categories gave this issue a certain prominence: after all, it is hard to evaluate a debate over whether such and such an accident is real without some understanding of what exactly an accident is. But in a way just as striking, it seems to have been Ockham's contemporary and fellow Franciscan, Peter Auriol, who provoked scholastic authors to reconsider their theories of accidental form.

Auriol begins his discussion of accidents with this summary statement:

> I state the following proposition, that an accident is a true thing, on account of the opinion of the ancients, who say that an accident is not a reality outside the soul but is a thing (*res*) that is not the substance itself. Nevertheless it is not a bounded (*terminata*) and complete thing without its substance. Thus it has a reality that is not [the reality of] its substance and nevertheless it is not a *thing* distinct from its substance. (IV *Sent*. 12.1.1 [109aC])

On its face, this looks like quite a safe and bland thing to say about accidental forms: they are in some sense true things, but are incomplete and dependent on their substance. To say they are not "bounded" is to say just this: that their nature is incomplete until they are attached to some subject that serves to bound them. The examples Auriol goes on to offer are perhaps no clearer than the summary statement, but they are not obviously controversial. First, he offers the example of the relationship between line and point – not presumably, that either one is an accident of the other, but that they share the characteristics of each being a thing, but yet one being dependent on the other. (In fact they are mutually dependent, as Auriol

indicates, but that is an incidental feature of the example.) Then, more aptly, he offers the examples of whiteness and its surface, shape and quantity, and rarity and the parts of a thing (which spread out as the thing becomes rarified). In each case, he argues that the form and its subject make one undivided thing. So, for instance, "from the whiteness and the surface there comes about one thing: not through their being linked together in the way one complete thing is linked together with another complete thing" (109aE).

Just what this lack of division amounts to becomes clear only when Auriol turns to giving arguments for his view. The five complex arguments that he offers focus entirely on establishing that an accident is not something independent from its subject, but rather that the two are "indivisible in every way." His first and principal argument runs as follows:

> Form and formal effect are the same formality. But the formal effect of an accident is not a thing divided from its subject; instead, the subject and the formal effect are one through their being internally indivisible. Therefore the form or accident and its subject are not divided things, but are one through their being indivisible in every way. (109bAB)

Auriol goes on to argue at length for each of the premises, and we can get a clear sense of his account by considering some of these arguments. The obscurely-phrased first premise can be glossed as follows: *that the form and its effect qua form are essentially the same thing*. I gloss "formal effect" as the form's effect *qua* form. The point is that a form is a kind of cause, a formal cause, and so for any form there should be an associated effect that it has on its subject. By "formality" (*formalitas*), Auriol seems to mean something like *quiddity* or *essence*.[6] As it happens, however, the word *formalitas* never again appears in this article, and so the discussion comes to focus on the claim that there is no difference between a form and its formal effect.

To evaluate this claim, Auriol needs to grapple with the question of what a formal effect is. Auriol's initial characterization is that "the formal effect of a form is to form (*formare*), and the formal effect of an act is to actuate (*actuare*)" (109bB). This looks unhelpful, but it suits Auriol's purpose because it leaves wide open the question of what this formal effect might be. He then argues as follows:

> The formal effect of a form and act is to form and actuate matter. Then I ask: Is the form the actuation itself, or is the actuation something deposited (*derelictum*) by the form in the subject? The second cannot be maintained, since what is deposited would be either [i] something absolute or [ii] something relational. If [i] it were something absolute (as one doctor imagines), then quantity would deposit some sort of extension and redness would deposit reddening (*rubicundatio*). If so, then it follows that something can be actuated without the act, and formed without the form, because, as a result of its being absolute, God can through his power separate the thing deposited [from the form that deposited it]. Further, the form is then not a formal cause, but an efficient cause, for the form would in this way impress its effect in matter just as would an efficient cause. Nor [ii] can that which is deposited be

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[6] Compare Aquinas, I *Sent*. dist. 8 exp. 2 (vol. I, p. 236), which refers to "formalitas, sive quidditas."

> something relational, for if it were a relation then to be actuated and formed will be to be related. (109bBD)

This passage goes to the heart of Auriol's account. To ask about the identity of the form and its formal effect, for Auriol, is to ask whether or not the role of a form is to "deposit" some further thing in the subject. If so, then we would have to say that the accidental form of quantity would deposit extension, or some such thing, and the form of redness would deposit reddening.

Auriol plainly intends for this to look unattractive on its face, but he thinks that when we consider the possibilities for what might be deposited, we will realize that the account is utterly incoherent. The deposit will be either something relational or something absolute (that is, nonrelational). If it is relational, then we would be committed to the view that every case of a thing's being made actual or informed consists in its being related somehow. This seems quite implausible. If, on the other hand, the deposit is something absolute, then Auriol sees two equally implausible consequences. First, for every accidental form it would be possible to distinguish two absolute things: the form itself and its deposit. But where there are two absolute things, it is logically possible for one to exist without the other. Hence it is possible, at least by the power of God, if not naturally, for a thing to undergo reddening without the form of redness, and so on in other cases. This seems absurd – how could a thing become red without taking on the form of red? Second, if an accidental form acts as a cause by impressing something on the effect, then it is hard to see what distinguishes formal causality from efficient causality. The distinction seems to collapse.

Auriol offers just one argument for the main argument's second premise, that the formal effect of an accident (what he calls the actuation) is indivisible from the subject itself.

> Now I prove the minor, that the formal effect of an accident is undivided[7] from its subject. For if the actuation is a thing divided from that which is actualized, then – since that actuation actuates the thing being actualized – I ask what that actuating of that actuation is. If you say that it is the same as that actuation, then I have my conclusion, because by parity of reason one might as well stop at the first. If it is distinct, then that will again actuate the thing that is actualized, and I ask about its actuation. If it is the same, I have my conclusion, that one might as well stop at the first. If it is distinct, this will go on to infinity. (110aAB)

The argument is based on the threat of a regress. If we recognize two different things, the actuation and the subject actualized, then we can ask the same question as before, one level down: what is the actualization of that subject? If at this point we choose to identify this lower-level actuation with the subject's actualization, then we might as well have done so at the previous stage – there is no rationale for going one level down before asserting the identity. But this of course is a formula for an infinite regress, which in this context looks to be vicious.

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[7] Reading *indivisus* for *indivisio*. Compare *non est res divisa* in the original statement of the minor premise. My translation of this whole article, based on a corrected edition of the text, is available through Russ Friedman's "Auriol Homepage," currently at http://www.igl.ku.dk/~russ/auriol.html.

Auriol's overall conception of accident is perhaps best understood through his examples. A subject stands to an accidental form, he claims, as a line stands to its endpoint. If the two were divided as distinct things, "then each would be bounded (*terminata*) without the other. . .. The point would not be the boundary of that line, but would be something impressing that boundary" (110aB). Admittedly, the obscurity of points in their own right diminishes the value of this as an analogy, but what Auriol is trying to get at is the idea that a form does not stand to its subject as something extrinsic, acting on that subject. This is the wrong causal model, the model of efficient causality. Instead, there is (as Auriol puts it) an *intima indivisio* between form and subject, an intrinsic undividedness. As an actual example of an accidental form, Auriol considers quantity, which he takes to be associated with the formal effect of making a thing *partible* – that is, making it susceptible to partition in the way that is characteristic of extended things. Auriol now runs a version of the earlier argument, arguing that this effect is not something deposited by quantity in its subject, but is the quantity itself (111aAB). So quantity is not something that literally *makes* its subject be susceptible to partition – rather, quantity is that susceptibility itself. It is the very feature of the subject that constitutes its being in such and such a state, rather than something prior that *puts* the subject into that state. The same of course goes for other accidents. The accidental form of red does not literally *make* a thing be red; rather, it just is the subject's state of being red. In Auriol's words, "color is nothing other than the coloration itself and a state (*affectio*) that belongs intrinsically to another" (IV *Sent*. 12.1.2 [112aC]). The form of rectangularity does not *make* its subject have a certain shape; rather, it just is the state of having that shape. Thus Auriol says that when talking about shapes it is more appropriate to use "figuration" (*figuratio*) than "figure" (*figura*), because "figure" implies a thing with its own unbounded existence, whereas "figuration" implies a thing bound to another.[8]

Auriol expressly claims at the start of his discussion, and occasionally throughout, that the accidental form is a "true thing" with its own reality. Thus the quantity and the underlying substance "are not one and the same" (111aB). It can look at times as if he is not really serious about that claim, given the sort of unity he describes between subject and accident. In fact, though, it is crucial to Auriol's strategy to insist on a distinction between subject and accident. This whole discussion comes in the context of Eucharistic theology, and Auriol takes for granted that any satisfactory account of that topic must allow for accidents to exist without their subject, at least by divine power. Hence there must be some sort of distinction to be drawn here, and not merely a conceptual one. But Auriol doesn't think that his account of the unity between subject and accident presents an obstacle to the notion of free-standing accidents (IV *Sent*. 12.2.1). To be sure, such a thing is not naturally possible. Even so, it is possible in the absolute sense, which is to say that God could

[8] "Intentio Philosophi est quod accidens, eo quod non est ens, sed entis, non sit res terminata, sed res in adiacentia, imo ipsa adiacentia ad alterum. Unde proprius figura exprimitur per hoc nomen figuratio quam per hoc nomen figura, quia figura rem suam importat per modum cuiusdam terminati, figuratio vero per modum adiacentis" (IV *Sent.* 12.1.2 [112aEF]).

preserve the color and shape of the bread without the bread itself. What Auriol takes his philosophical analysis to reveal is just what sort of miracle this would be. It would not consist in God's making these accidents into independent, bounded things. That would be to turn accidents into substances, and so would not be a way of preserving the accidents of the host at all. Accidents are essentially unbounded and incomplete, in their own right, and so cannot fail to be such (113aBC). But what God can do is allow such things to exist on their own despite their incompleteness. Auriol concedes that we cannot conceive of how this is possible. Accidents are so dependent on their subject that, to us, it *seems* impossible for them to exist on their own. But Auriol denies that our intuitions are any guide to possibility: "God through his power can do more than our intellect can reveal or intuit" (113bC).

Auriol's conception of accidents was widely – perhaps even universally – rejected by later scholastics.[9] In large measure, that rejection was motivated by the sense that the view could not be squared with a plausible account of the Eucharist. And indeed Auriol's line on the Eucharist really is hard to swallow. He considers, for instance, the objection that on this account "God could make straightness without a line, and roughness and lightness in weight without parts." His reply is defiant: "Show me the reason why God can do whatever does not imply a contradiction, yet cannot do these things" (IV *Sent.* 12.2.2 [115bC]). This is hard to accept, but once we give up intuition as a guide to logical possibility, it is hard to know how to assess such claims. In any case, let us set aside such theological matters, and focus on what might be said about Auriol's theory as a metaphysical doctrine.

Later scholastic authors seem to have been in agreement that Auriol's account of form is flatly unacceptable for philosophical as well as theological reasons. John Capreolus, a Thomist writing a century after Auriol, decried the account as "utterly astonishing" (*valde mirabile*). Most damningly, Capreolus argues that "if all accidents are indistinct from their subject, then consequently they are indistinct from each other" (II *Sent*. 18.1.3 [154a]).[10] Once the logic of Auriol's argument is applied to substantial form, then "as many absurdities follow from this view as from the view of those who hold that all things are one" (ibid.). One part of matter could not be distinguished from another, because such distinctions require distinctions at the level of form. Hence human beings would not be distinct from donkeys.

In a way this line of argument goes too far. Auriol had actually anticipated this objection about accidents failing to be distinct from each other (IV *Sent*. 12.1.2 ad arg. [112bC]), and had stressed in reply that he is not asserting that accidents and

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[9] The distance between Auriol's view and mainstream opinion is made particularly clear by the way Suárez treats Auriol's view as so far from the mainstream.

[10] Johannes Capreolus (1380–1444) is sometimes described as "the prince of Thomists." All citations are drawn from his *Defensiones theologiae*, vol. IV. As in all his writings, he sprinkles his discussion of Auriol with passages from Aquinas intended to support his own view. In this case, however, these passages do little to ease the concern that Aquinas has nothing very clear to say about the issue Auriol is addressing. Capreolus's discussion of Auriol includes a lengthy and essentially verbatim description of Auriol's arguments – a description that in many places provides a clearer and less corrupt text than the Rome edition of Auriol's work.

their subject are identical. Subjects and accidents are *distinct things*. Accordingly, Auriol is not committed to the identity of accidents. Auriol's claim is rather that a subject has a certain kind of unity with its accident, distinct from the weaker way in which two things that are independent can be unified. Thus he asserts not that accident and subject are *indistinct* (the identity claim), but only that they are *undivided* (the unity claim). Even so, there is something to Capreolus's charge. Auriol wants us to treat accidents as states (*affectus*) of a subject: to be rarified just is to have parts spread out in space; to be a rectangle just is to have parts bounded in a certain shape. In each case there is no accidental form over and above these states of the subject. Once this way of thinking about form becomes generalized, it is easy to form the suspicion that accidents have been analyzed away, and that all there are bodies arranged in various patterns. This is not to say that human beings are the same as donkeys, because of course human bodies are in different states than donkey bodies are. But it may be that form has simply dropped out of the picture.

The suggestion is that Auriol's approach to form is tantamount to abandoning Aristotelianism – or at least to abandoning the hylomorphic framework. But of course this is not how Auriol views his project: he regards himself as simply offering the most plausible interpretation of accidental form. (He takes an analogous position regarding substantial form at II *Sent.* 12.2.1.) In fact it is a complex matter to decide whether Auriol's account amounts to a rejection of form or simply a reinterpretation. Setting aside the question of what Aristotle himself might have made of this dispute, we can understand Auriol as just one among various voices attempting to understand the ontology of the nine accidental categories. Among later scholastics, there was general agreement that something like Auriol's account might be acceptable for most of the nine. Capreolus, for instance, is troubled by Auriol's account only as it concerns two of the accidental categories, quantity and quality. Like most scholastic authors, Capreolus was not inclined to defend in strong terms the reality of all the categories. This does not mean, however, that Auriol's view was uncontroversial even in the case of these lesser categories. Ockham, for instance, argued against the reality of all the categories other than substance and quality by describing those categories in terms very much like Auriol's. Shape, for instance, according to Ockham, just is the disposition of a thing's parts. But Ockham takes this not as providing insight into what forms are, but as an argument against shape's being a genuine form. From Ockham's perspective, then, Auriol's account really would lead to the elimination of all accidental form.[11]

These issues come into sharper focus in the later work of Francisco Suárez. Like Capreolus, Suárez thinks that Auriol's view is utterly indefensible in the case of quality and quantity. But Suárez recognizes that Auriol might be understood in

[11] I have not found Ockham actually discussing Auriol's views in this regard, and there is reason to doubt whether he would have been aware of those views, given that he remarks at one point that "I have seen little of what this doctor says – for if all the time I have had to look at what he says were put together, it would not take up the space of a single natural day" (*Ord*. I.27.3 [*OTh* IV, 238], trans. Pasnau in *Cambridge Translations of Medieval Philosophical Texts. Vol. 3: Mind and Knowledge,* New York: Cambridge University Press, 2002, 226).

several different ways. If he means, as Capreolus seems to have thought, that there is no real distinction between an accident and its subject, then his view "is incompatible and inconsistent with the faith in many ways" and is moreover "supported by no plausible arguments" (*DM* 16.1.2). But Suárez saw that Auriol might be understood as making a weaker claim, that forms are distinct from their subject, but identical to the actuation of that subject.[12] (This in fact surely is Auriol's view.) Suárez thinks that this account too is false. It may not flatly contradict the faith, but it is a "perilous view" – as indeed we have seen with regard to the Eucharist. Suárez also thinks that it gets formal causality wrong, at least in the case of the real accidents in the categories of quantity and quality (ibid.). Over the course of Suárez's long discussion of accidental form, it becomes clear that he accepts something like Auriol's account for certain sorts of accidents – what Suárez calls *modes*. Among the modes that Suárez recognizes are shape, location, and position.[13] These are true accidents, inasmuch as they do exercise formal causality on their subject, but there is no distinction in these cases between the form and its causality on the subject: "in the case of these modal forms, the formal cause is not distinguished from its actual causality" (*DM* 16.1.22). But Suárez thinks that between a mode and its subject there is no real distinction but only a modal distinction, which is to say that the mode cannot exist apart from its subject. There can be, as Suárez says by way of example, no sitting without a sitter – not even God can pull that off (ibid.). So this way of thinking about accidents would push Auriol back toward the first and utterly unacceptable view according to which forms are not really distinct from their subject.

Viewed in its context as part of a larger scholastic debate over the status of accidental forms, Auriol's view can be read as just another strategy for maintaining a hylomorphic approach while moving away from the most avidly realistic, nonreductive conception of how forms relate to their subject. Auriol's critics denied that his strategy was successful; they took him to be confusing accidents with modes,[14] or to be eliminating accidents altogether. But of course any such critic owes us some positive story about accidental form. And what is really surprising about the discussions I have studied is just how very obscure they are. Given the centrality of this issue to the Aristotelian picture, one would expect there to be a clear account – or at least various clear competing accounts – of how accidental forms relate to their subject. But what the post-Auriol discussion of this topic reveals, more than anything, is just how unclear the scholastics were on these issues.

Consider Capreolus, who summarizes his reply to Auriol in this way: "His principal assumption is false, because the actuation and formation that a form gives to its subject is not the same as the form itself, nor is it a relation (*respectus*); rather, it is *esse*" (II *Sent.* 18.1.3 [151b]). Capreolus denies, then, that form and subject are

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[12] This is so even though Suárez plainly does not have Auriol's work in front of him, but is relying on Capreolus' detailed exposition.

[13] See S. Menn, "Suárez, Nominalism, and Modes", in K. White (ed.) *Hispanic Philosophy in the Age of Discovery* (Washington, DC: Catholic University of America Press, 1997), 226–256.

[14] Thus Suárez: "it is hardly intelligible what he means, unless perhaps he thought that no accident is a *thing* distinct in reality from the being of the substance, but only a *mode.*"

"undivided" in the way Auriol had argued. Instead, there is something in between a form and its subject, something that Capreolus too is willing to call the actuation of that form, but which he thinks is not the form itself but *esse* – the accidental being that a form imparts to a subject in virtue of its informing that subject. In his own words again: "the form, although it is the act (*actus*), is nevertheless not the actuation. Thus it does not actuate immediately through its essence, but through the *esse* that it gives, because neither is that form properly the act, unless inasmuch as it is considered under *esse*" (151a). This is not efficient causation, as Auriol had argued, but the *sui generis* manner of action proper to form. The account allows us to understand forms as absolute things, complete in their own right, and not purely adjectival on substance. But it does not, as Auriol had argued, lead to the absurd result that a thing could be actualized without having the corresponding accident, because Capreolus insists that this *esse* cannot occur apart from its form. "Not all absolute things that are essentially distinct can be separated from each other" (150b).

Suárez agrees with Capreolus that something of this sort has to be said against Auriol. Unless "actual causality is something distinct from both the causing form and the receiving subject," there is no way to understand how "God can preserve the whole being of the accidental form and the subject without the accident's exercising its formal causality on the subject" (*DM* 16.1.6). But Suárez cannot accept Capreolus's specific response, because he wants to reject the very distinction that Capreolus assumes between essence and *esse*. That is something he will argue for much later, however (in *DM* 31), so for now he concludes only that "these arguments should be resolved by abstracting from that question about the distinction between essence and existence" (*DM* 16.1.8).[15] In its place, Suárez offers the following:

> This information or actuation is something absolute, essentially including a transcendental relation (*respectus*). But it is something absolute not as an entity really distinct from the entity of the form, but as a mode distinct by the thing's nature. This is why it implies a contradiction for such a mode to be preserved without that form, although not vice versa. The mode just mentioned includes that transcendental relation of actual union to a subject, and this is why it implies a contradiction for that mode to remain in nature without the subject's remaining affected and informed by such an accident. (*DM* 16.1.9)

So in reply to Auriol's central challenge – Is the actuation something absolute or something relative? – Suárez replies that it is both: something absolute that essentially involves something relational. What is absolute is not a full-fledged *res*, however, which would be something really distinct from the form. Instead, it is a mode, something that is only modally distinct from the form and so incapable of existing without the form. But that mode is also connected to its subject, not as a mode of that subject but in virtue of being essentially related to that subject. (To say that this relation is transcendental is presumably to say that it does not fall into any

[15] Quite apart from his resistance to this distinction, Suárez offers other reasons at this point for rejecting Capreolus's approach, even granting the *esse* – *essentia* distinction. I will not summarize those here.

category, and in particular not into the category of relation.) Hence the mode cannot exist without the subject's being informed. But the mode is not the subject, no more than the mode is the form.

All this seems perfectly coherent and consistent, but at the same time rather obscure. It is as if Suárez made a list of all the things that needed to be said, and then patiently constructed an account that would allow him to say it all, regardless of how convoluted the results look to be in the end. Of course, a more sympathetic picture might emerge from a lengthier, less superficial investigation. But I will content myself here with having sketched these several alternates to Auriol's approach, and offer the bare suggestion that scholastic thinking about accidental forms was far less clear than one would hope and expect. With this material in hand, we can return to the problem of sensible and intelligible species.

3 Species Considered as Accidental Forms

So far as I have found, no scholastic philosopher thought to analyze sensible and intelligible species by appealing in any rigorous way to a general theory of accidental form. Even so, it seems clear that such an appeal is very much in the spirit of scholasticism, and moreover that it holds considerable promise for illuminating the role of species. So at any rate I now want to suggest.

I began by distinguishing three accounts of how a cognitive power relates to the species that inform it. It will, I hope, be obvious that the first of these accounts, the adjectival model, corresponds quite closely to Auriol's conception of the relationship between an accidental form and its subject. Auriol claims that an accidental form is nothing other than the actuation of a subject, which seems to amount to the claim that the form is a state or condition of the subject. The adjectival model makes the analogous claim: that the species is nothing other than that state of a cognitive power in virtue of which it cognizes φ. Indeed, since a species just is an accidental form, and a cognitive power just is its subject, we can fairly describe the adjectival model as a special case of Auriol's more general theory.

As an instance of the more general account, the adjectival model ought to meet with the same sorts of criticisms that Auriol's proposal faced. Indeed, just as Auriol's approach was generally rejected as unacceptable, we ought to expect the adjectival model to be likewise rejected. Now there is not, so far as I know, any explicit scholastic discussion of what I'm calling the adjectival model of species. Some scholars believe that such an account should be read into Aquinas and presumably into other authors as well, but no scholastic is known to have either defended or criticized such an account explicitly. The proponent of the adjectival model is likely to say that the view does not need to be stated explicitly, because it would have been taken for granted that this is how a form relates to its subject. The preceding discussion, however, makes a very strong case for the contrary conclusion: that this is not how accidental forms were generally understood, and that therefore it would be

most surprising for anyone other than Auriol to treat species in this way, especially without explicitly indicating as much.

Once we recognize that the adjectival model cannot be regarded as the standard or official scholastic account of species, we can explain the otherwise puzzling fact noted earlier: that scholars could challenge the very existence of species without receiving an incredulous stare. To anyone taking the view that the species is nothing more than the state in virtue of which a cognitive power is cognizing φ, the claim that species do not exist could be rejected out of hand. We can now see why Olivi, Ockham, and other critics of species did not meet with that sort of response. The prevailing understanding of accidental forms took there to be something intervening between the form and its subject, something deposited (*derelictum*) in the subject by the form, as Auriol put it. When species are understood on this model, then it becomes quite apparent why some would want to treat them as superfluous, and to maintain that cognition occurs in virtue of a power's taking on a certain state, but without any further species involved. The rejection of species is incoherent only if one follows Auriol in identifying the species with the subject's actuation.

Yet the friend of species ought to hesitate before appealing to Auriol. The hostile reception of his view raises doubts about whether the adjectival model can be regarded as a genuine defense of species. As noted earlier, Ockham wanted to give a similar analysis of many of the accidental categories and then conclude on that basis that *those forms do not exist*. There is thus a question of whether the theory succeeds in preserving a hylomorphic analysis of cognition, or whether instead it replaces it with something not distinctively Aristotelian at all. One might suggest it is a mere truism that when a cognitive power apprehends φ, it does so in virtue of entering into a state such as to apprehend φ. Indeed, this is more than a suggestion; part of what makes the adjectival model attractive is that it does render species invulnerable to attack. But can it be right to understand a hylomorphic analysis of cognition in such a way that the hylomorphism comes out as trivially true? Shouldn't the Aristotelian approach be a substantive thesis about how cognition occurs?

These remarks, all by themselves, do not show anything about how a given author's theory of species should be interpreted. For even if the general theory of form *ought* to have pushed the scholastics in a certain direction, there is no guarantee in particular cases that the author in fact was consistent in his thinking about species. This is especially so for Aquinas and other scholastics writing prior to the fourteenth century's heightened concern over the status of accidental forms. So in defense of ascribing the adjectival model of species to Aquinas, one might say that he treated species in a way that he would not have treated forms in general, or that he had no clear conception of how to treat forms in general, or even that he implicitly accepted something like Auriol's general account of form. I do not claim to have ruled out any of those possibilities. But what I do think we can flatly reject is the suggestion that the adjectival model is preferable because species are forms and this is how forms in general are to be understood. That is manifestly not the case.

In all, I think that Auriol makes a doubtful ally at best for the friend of species. What, then, about the other two models considered in section one? The second

theory considered, the actualizer model, treats the species not as the state of a cognitive power but as that which is immediately responsible for the power's entering into a certain state. This might be understood as corresponding fairly closely to the accounts of Capreolus and Suárez against Auriol. But the actualizer model itself is merely a general schema that might get fleshed out in any number of ways. The discussion in section two makes it fairly clear that scholastic authors would reject some of those possibilities out of hand. In particular, no one seems to take seriously the possibility that a species might be an efficient cause. Such an account would not qualify as a scholastic Aristotelian account. And since the term "species" in its cognitive sense is necessarily tied to that Aristotelian framework, we can conclude that the model of efficient causality is not a viable model for species.

Capreolus and Suárez agree that the relationship between form and subject is a special sort of relationship distinctive of formal causality. On Capreolus's model, the actuality of a cognitive power would be some sort of *esse* deposited by a species and quite distinct from that species. For Suárez, the actuality would be a mode of the species, distinct from that species only modally and also essentially related to the cognitive power. The sheer abstractness of these accounts, together with the evident lack of consensus over the different options, makes it unsurprising that scholastic authors did not commonly appeal to the general theory of form in analyzing cognition. That would have been to explain the obscure through the more obscure. It is no wonder, too, that modern scholars have been uncertain about how to understand the relationship between species and cognitive power. That uncertainty mirrors the uncertainty of the scholastics themselves.

Although the abstractness of Capreolus's and Suárez's accounts renders them of limited value in trying to understand cognition, they do shed some light on the last of the three accounts of species discussed in section one, the object model. According to this theory, species actualize a cognitive power in virtue of being somehow apprehended by that cognitive power. Like the actualizer model, this requires the species to be something over and above the cognitive power's state of being actualized, but here the relationship between power and species is a cognitive one. It is of course impossible to apply this analysis generally to the relationship between form and subject. The fire truck is not red in virtue of its apprehending the form of redness. And one might take that simple observation as enough to overturn the actuality theory of species, reasoning as follows: (a) species are forms; (b) forms cannot be analyzed in this way; therefore (c) species cannot be analyzed in this way; therefore (d) the object model cannot be considered an Aristotelian theory of cognition.

Even if this quick refutation were correct, it would not rule out the object model as the correct interpretation of a given author. As with the adjectival model, an author might be tempted to embrace the object model without realizing that it clashes with his more general conception of form. Moreover, given the obscurity of scholastic thinking about the form–subject relationship in general, it is easy to see how an author might think it excusable to employ the object model in the case of cognition. For it is not as if there was any commonly accepted general model to stand in place of the object model. So if Aquinas and others sometimes seem to treat species as

objects of cognition,[16] this might be attributed to the poverty of the overall scholastic conception of form.

The proposal just canvassed concedes in effect that the object model of species is not a genuinely Aristotelian theory, inasmuch as it treats species in a way that is incompatible with their status as accidental forms. Even so, the thought goes, it might still be the case that certain authors fell upon the object model as the best account they could arrive at. I now want to suggest, however, that a more full-bodied defense of the object model can be mounted from within the Aristotelian tradition. For once we accept, against Auriol, that there is a distinction between the form and the actualization brought about by that form, we can then quite properly ask about the relationship between the cognitive power and the species. This relationship will not be merely adjectival, but will have two distinct and independent relata. Now the natural thing to say about that relationship is that the species *informs* the cognitive power. This is of course not very helpful, since it amounts merely to reiterating the point that species are forms. Still, it may be the only uncontroversial thing that can be said, given the state of the debate on this issue. Even once we have said this much, though, we can see why a scholastic author might want to treat that species as something cognized. For no matter how one thinks in general of the *informing* relationship between accident and subject, it was routine to think that cognition just is the reception of a certain sort of form within a certain sort of power within the soul. When we have a form of that sort (a species), informing a power of that sort (a cognitive power), how ought we to describe it? Well, it seems entirely natural to say that the species stands in a cognitive relationship to that power. This is not to deny that the species is a form, and that the power is its subject, but simply to acknowledge that this sort of informing of subject by form is a cognitive informing, and so a case of cognition, brought about by the formal causality of the species.

To be sure, this way of describing the situation is bound to cause misunderstandings, unless one immediately goes on to explain that the species is not really the object of cognition in the sense of being the thing perceived or thought about. So some story needs to be told about why the species is not an object in that sense, and of course it is just this sort of story that Aquinas frequently tells. But given that the prevailing scholastic understanding of forms did treat them as independent, distinct entities, it seems almost inescapable that some authors would think of the species as a kind of object of the cognitive power. This need not be regarded as either a slip or a step away from the hylomorphic framework, given how that framework was understood.

In light of all this, it seems possible to draw one final conclusion about the larger significance of the scholastic debate over species. Although medieval critics of species did make prominent appeal to epistemological considerations – to the threat of what Olivi called the "veil" of species[17] – it may be something of a distortion to frame the debate primarily in those terms. The denial of species is properly

[16] For the evidence, in the case of Aquinas, see Pasnau (1997), 201–208.
[17] See Pasnau (1997), introduction and Ch. 7.

understood as part of the larger project of scholastic nominalism. Olivi, Ockham, and others sought to rid their ontology of any accidental forms they judged to be superfluous, and so they proposed to eliminate action, relation, quantity, and all the others accidental categories aside from quality. Sensible and intelligible species were a target not primarily for epistemology reasons, but because they too were judged superfluous. Likewise, the mockery of species among seventeenth-century authors arose not from epistemological concerns – after all, many of these authors were happy to embrace representationalism – but from a general scorn for the scholastics' real accidents. Thus the medieval attack on species is best viewed not as a precursor to the debate over direct realism – although that is of course a *part* of it – but as an early step toward the modern rejection of scholastic Aristotelian metaphysics.

Accordingly, those who would defend species by embracing the adjectival model are to a considerable extent missing the point of the debate over species. To treat species as no more than states of a cognitive power is to give in to the nominalist critique, either by implicitly conceding that species are not true forms or by reducing scholastic hylomorphism to something utterly banal. Only once one sees what forms were generally thought to be, among scholastic authors, can one mount a proper defense on their behalf. If, that is, one still wants to mount a defense.

Acknowledgments Many thanks for their suggestions to participants in the Helsinki conference on theories of perception, and to the members of a 2004 NEH Summer Seminar in Boulder, for their comments on this material.

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Seeing and Judging: Ockham and Wodeham on Sensory Cognition

Dominik Perler

All medieval philosophers in the Aristotelian tradition subscribed to the thesis that cognition is a complex process for which both sensory and intellectual faculties are required. They also unanimously accepted the thesis that these faculties are hierarchically ordered: the senses, usually called the "lower faculties", are located in the body and therefore subject to material conditions, whereas the intellect as the "higher faculty" is not present in any part of the body and therefore not materialized. Such a neat distinction looks clear and simple at first sight, but it raises a number of questions when closely examined. First of all, we may ask what kind of task each faculty performs in the cognitive process. Let us assume that someone intends to have a cognition of an apple lying on a table in front of her. What exactly are her senses supposed to do? Is their task simply to receive visual, tactile, and other impressions from the apple and to transfer them to the intellect? Or do they somehow work upon these impressions and transform them into a distinct type of information? Second, we may also ask how the two faculties are supposed to cooperate. Are the senses simply some kind of supplier for the intellect? And how can they supply anything at all if they are subject to material conditions whereas the intellect is not?

As is well known, all of these questions were widely discussed by thirteenth-century philosophers. Thomas Aquinas, for instance, claimed that there can be a cooperation between senses and intellect because they are faculties of one and the same substance, designed by nature to interact.[1] He also tried to explain the specific task of each faculty by distinguishing two types of cognitive objects.[2] In his view, the senses make particular things cognitively accessible by providing sensory images, so-called "phantasms", of these things. The intellect, on the other hand, deals with universals by abstracting universal essences (or natures) from the phantasms. Comprehensive cognition is possible only when senses and intellect work together so that both particulars and universals will be grasped.

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[1] See *Summa theologiae,* I.77.2; *Quaestio disputata De anima*, 11c, in *Quaestiones disputatae*, ed. by P. M. Calcaterra & T. S. Centi (Turin, Rome: Marietti, 1965), vol. II, 322–323.
[2] See *Summa theologiae,* I.86.1; *Quaestio disputata De anima*, a. 20, in *Quaestiones disputatae*, vol. II, 354–359.

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It is obvious that this account of the cognitive "division of labor" relies upon strong metaphysical assumptions. Only if one assumes that there are in fact universal essences that can be abstracted from particulars is it possible to claim that the intellect somehow works upon the sensory images and abstracts universal objects. Ockham and his successors in the fourteenth century clearly rejected this claim. In their view, there are nothing but particular things that can become cognitively accessible. That is why both, intellect and senses, primarily deal with particulars. Criticizing Aquinas and other predecessors, Ockham firmly holds: "I claim that cognition of a singular sensible thing is absolutely the first one in this life so that the very same singular thing that is first perceived by the sense is under the same aspect first intuitively understood by the intellect…"[3] Thus, when someone cognizes an apple, her intellect does not abstract the universal nature from the phantasm presenting the particular apple, simply because there is no such thing as the universal nature. Both senses and intellect are directed towards the *particular* apple and make this thing cognitively accessible. The intellect may, of course, come up with a universal concept and apply it to the apple, but this concept is a mere mental product, and it is formed in a second stage only.[4] The first thing the intellect deals with is the particular apple.

This explanation clearly avoids the controversial metaphysical assumption that there are universal natures, somehow ready to be grasped by the intellect.[5] But Ockham's explanation also raises new questions, particularly questions about the controversial "division of labor" between senses and intellect. How is the specific function of the senses to be explained if both, senses and intellect, deal with the same thing under the very same aspect? One could interject that it is superfluous to speak about a cognitive function of the senses, if they do not have their proper type of object. Why should we assume, for instance, that the senses first make the particular apple cognitively present, if the intellect is also able to cognize that thing? Should we not avoid talking about a cognitive function of the senses and assign them a mere causal function, saying for instance that they simply receive inputs the intellect needs for performing a cognitive act? This is the crucial problem I will discuss in the first part of my paper. In the second, much shorter part, I will examine

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[3] *Ordinatio* I.3.6 (OTh II, 494): "…dico quod notitia singularis sensibilis est simpliciter prima pro statu isto, ita quod illud idem singulare quod primo sentitur a sensu idem et sub eadem ratione primo intelligitur intuitive ab intellectu…" See also *Ordinatio* I, prologus (OTh I, 64–65); *Quodl.* I.15 (OTh IX, 83–86). All references to Ockham's works apply to his Opera philosophica (= OPh) and Opera theologica (= OTh), ed. by G. Gál et al. (St. Bonaventure, NY: The Franciscan Institute, 1967–1989).

[4] Ockham calls this formation of a universal concept "abstractive cognition"; see *Ordinatio* I, prologus (OTh I, 30–31).

[5] In addition, it avoids the epistemological assumption that the process of abstraction enables the intellect to have reliable access to universal natures. On the problems involved in this assumption, see R. Pasnau, *Thomas Aquinas on Human Nature* (Cambridge, NY: Cambridge University Press, 2002), 310–318; L.-B. Geiger, "Abstraction et séparation d'après S. Thomas *In de Trinitate*, q. 5, a. 3" in idem, *Penser avec Thomas d'Aquin* (Fribourg, Paris: Cerf & Editions Universitaires de Fribourg, 2000), 139–183.

the role the senses play in the acquisition of knowledge. For talking about sensory cognition as an epistemic basis only makes sense if we explain how we can have *reliable* sensory access to particular things around us and, consequently, *reliable* knowledge of them, despite the sensory illusions we often notice.

In both parts of my paper I will focus on William Ockham's theory of sensory cognition, partly also on Adam Wodeham's, who challenged Ockham in some crucial points.[6] Unfortunately, their accounts of sensation have not been widely studied, because most scholars focused on Ockham's explanation of intuitive intellectual cognition, particularly on his controversial claim that there can be such a cognition of non-existent things.[7] Interesting as this special type of cognition may be, it is not at the core of Ockham's or Wodeham's theory.[8] Ockham himself only mentions it in a short "corollarium", pointing out that it occurs in the special case of divine intervention, not in the normal course of nature.[9] Wodeham even claims that, strictly speaking, an intuitive cognition providing knowledge of existent things cannot enable us to have knowledge of non-existent things. If there is such peculiar knowledge, it must have another act as its basis.[10] In the light of these statements it would be quite misleading to consider intuitive cognition of non-existent things as the pivotal point of Ockham's or Wodeham's account of cognition. To understand the main thrust of their theories, we need to look at the standard case in which someone gains cognition of an *existent* thing by means of a natural cognitive process. In

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[6] Being Ockham's pupil and secretary, Wodeham by no means slavishly followed his teacher. While adopting the general framework of Ockham's theory of cognition, he deviated from it in some crucial points. It would therefore hardly be adequate to label him simply an Ockhamist. W. J. Courtenay, *Schools & Scholars in Fourteenth-Century England* (Princeton: Princeton University Press, 1987), 218 rightly remarked that it "was not so much Ockhamism or nominalism but rather the revolutionary innovations in philosophical and theological methods that occurred in arts and theology in that period in England, innovations to which Ockham contributed but for which he is not the sole or even primary source."

[7] A notable exception is E. Karger, "Ockham's Misunderstood Theory of Intuitive and Abstractive Cognition", in P. V. Spade (ed.), *The Cambridge Companion to Ockham* (Cambridge, NY: Cambridge University Press, 1999), 204–226, who provides a detailed analysis of sensory cognition and explains the vexed problem of cognition of non-existent things within the larger framework of both sensory and intellectual cognition.

[8] This is not to deny that modern commentators took it to be a crucial element of Ockham's theory – an element that raises the problem of skepticism, as some thought. Yet one should carefully distinguish between the (rather limited) importance Ockham attached to this problem and the importance it gained in modern discussions, inspired by the search for high standards of certainty. In her discussion of Ockham's alleged skepticism, M. McCord Adams, *William Ockham* (Notre Dame: Notre Dame University Press, 1987), 601 lucidly remarked: "... it is no objection to a theory that attempts to show how we can have certain knowledge according to one standard, that it does not succeed in showing how we can have certain knowledge according to another standard – especially where the latter is a standard that no reasonable person would accept."

[9] See *Ordinatio* I, prologus (OTh I, 38–39).

[10] Adam Wodeham, *Lectura secunda in librum primum Sententiarum*, prol., 2.4, ed. by R. Wood (St. Bonaventure, NY: The Franciscan Institute, 1990), 38: "... notitia intuitiva, quae re exsistente est virtute cuius potest sciri res exsistere, non est virtute cuius possit sciri non exsistere ipsa non exsistente."

particular, we need to examine Ockham's account of the role the senses play in such a process. For that reason I will focus on sensory cognition of existent things and its relation to intellectual cognition.

1 Modes of Sensory Cognition

To understand the cognitive role Ockham assigns to the senses, we need to locate them in his general scheme delineating cognitive processes. The starting point for every cognition (at least in the standard case) is a material object that affects the external senses. As is well known since Anneliese Maier's and Katherine Tachau's pioneering studies, Ockham denies that the object transmits special entities, so-called *species in medio*, to the senses.[11] Rejecting all kinds of intermediary entities, he claims that the material object directly impinges on the senses and causes physical impressions (*qualitates impressae*).[12] Activated by these impressions, the senses bring about the so-called sensory cognition (*notitia sensitiva*). In Ockham's view, this cognition can be either intuitive or abstractive, depending on the senses that are involved.[13] If the external senses are activated and if they apprehend something present to them as present and existent, an intuitive cognition occurs. If, however, only the imagination as an internal sense is active, apprehending a thing without taking notice of its existence, there is mere abstractive cognition. This distinction can, again, be illustrated with the example of the apple. If there is an apple in front of me and I see it as an existent thing, I have a sensory intuitive cognition. On the other hand, if there is no apple physically present to me but I am terribly hungry and visualize an apple in my imagination, I have nothing more than a sensory abstractive cognition. In the standard case, such an abstractive cognition presupposes an intuitive one, for I cannot visualize an apple if I have not previously seen one.

So far, the intellect has not been involved in the cognitive process. Only when it starts forming mental terms and when it apprehends the object by means of these terms is there an intellectual activity and, consequently, intellectual cognition (*notitia intellectiva*). Here again, Ockham distinguishes between intuitive and abstractive cognition.[14] There is an intuitive cognition if the intellect apprehends a present and existent thing as an existent thing. More precisely, Ockham claims that by means of such a cognition "one can know whether or not there is a thing such that, if there is a

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[11] See A. Maier, "Das Problem der *species sensibiles in medio* und die neue Naturphilosophie des 14. Jahrhunderts", in idem, *Ausgehendes Mittelalter* II (Rome: Edizioni di Storia e Letteratura, 1967), 419–451; K. H. Tachau, *Vision and Certitude in the Age of Ockham. Optics, Epistemology and the Foundations of Semantics 1250–1345* (Leiden: Brill, 1988), 130–135.

[12] See *Reportatio* III.3 (OTh VI, 105–114).

[13] See *Reportatio* II.12–13 (OTh V, 256–261); *Reportatio* III.3 (OTh VI, 114–125).

[14] Both deal with simple things (*incomplexa*) signified by simple terms, not with states of affairs or sentences signifying them. Ockham insists on the fact that the difference between the two types of cognition is not to be sought in a difference between their objects or their causes. See *Ordinatio* I, prologus (OTh I, 38).

thing, the intellect immediately judges that it is and knows with evidence that it is."[15] Thus, an intuitive intellectual cognition is always followed by a judgment about the existence or non-existence of the cognitive object. An abstractive intellectual cognition, on the other hand, is not followed by such a judgment.[16] In that case the intellect "abstracts from the existence or non-existence and from other conditions which contingently apply to a thing or are predicated of a thing."[17]

Taking into account the various steps of the cognitive process, we can draw the following picture:

	Sensory cognition		Intellectual cognition
	intuitive (sensation)		intuitive (apprehension followed by an
material thing ⟶		⟶	existential judgment)
	abstractive (imagination)		abstractive (mere apprehension)

Ockham emphasizes that all of these cognitions are distinct acts of the soul and therefore must not be conflated. In particular, he points out that the two types of intuitive cognition should carefully be distinguished. In his view, a sensory intuitive cognition cannot immediately be followed by an existential judgment, nor can it cause such a judgment. It first has to cause an intuitive intellectual cognition, which will then be followed by an existential judgment.[18] If we take into account the crucial claim that intellectual cognition always involves the use of mental terms, we can easily see why Ockham emphasizes this point. Let me explain this point with the familiar example of the apple. As long as I have a mere sensory intuitive cognition of the apple, I see it as something existent, and I am able to distinguish it from other objects present to me, given the specific shape, size and color I grasp. Yet I do not use the mental term "apple" or any other term to categorize the apple. This is why I am not yet able to come up with the judgment that there is an apple in front of me. For such a judgment, I clearly need mental categorematic and syncategorematic terms that come into existence only as soon as I engage in an intellectual activity. Thus, there is no immediate causal link between seeing an apple and judging that there is an apple in front of me. Ockham unequivocally says: "... no act of the sensory part [of the soul] is an immediate proximate cause – whether partial or total – of an act of judgment by the intellect."[19] The proximate cause can only be an intellectual act

[15] *Ordinatio* I, prologus (OTh I, 31): "... notitia intuitiva rei est talis notitia virtute cuius potest sciri utrum res sit vel non, ita quod si res sit, statim intellectus iudicat eam esse et evidenter cognoscit eam esse..."

[16] For a detailed discussion of this crucial difference, see Adams (1987), 501–509; C. Michon, *Nominalisme. La théorie de la signification d'Occam* (Paris: Vrin, 1994), 108–126; Karger (1999), 209–211.

[17] *Ordinatio* I, prologus (OTh I, 31): "Aliter accipitur cognitio abstractiva secundum quod abstrahit ab exsistentia et non exsistentia et ab aliis condicionibus quae contingenter accidunt rei vel praedicantur de re."

[18] See *Ordinatio* I, prologus (OTh I, 26).

[19] *Ordinatio* I, prologus (OTh I, 22): "... nullus actus partis sensitivae est causa immediata proxima, nec partialis nec totalis, alicuius actus iudicativi ipsius intellectus." See also ibid., 24.

that conceptualizes what is seen and thereby provides the mental terms necessary for judging. This act is precisely the intellectual intuitive cognition.[20]

This distinction between a pre-conceptual act of seeing (sensory intuitive cognition) and a conceptual act of apprehending (intellectual intuitive cognition) inevitably raises the question of how we should understand pre-conceptual seeing. What exactly does it mean that I see an apple without making use of the mental term "apple"? Unfortunately, Ockham does not give a detailed answer to this question. Modern readers, especially those influenced by the Kantian tradition, may immediately object that it does not make sense to speak about pre-conceptual seeing. If seeing is more than the mere reception of sensory inputs, it always involves an explicit or implicit use of concepts: we always see something *as something* and thereby conceptually categorize the perceptual object. For instance, I see the red, round thing in front of me as an apple or simply as a red, round thing. That is why I make use of concepts in the very act of seeing and not in a later act of intellectual apprehension. So Ockham's claim that there is a pre-conceptual sensory act of cognition before the intellect enters the scene and provides concepts looks quite problematic.

Although it is tempting to argue in this Kantian way, I do not think that Ockham's claim should be dismissed so easily. Let me try to elucidate it by appealing to theories of seeing in the current analytic discussion. Fred Dretske, a prominent defender of pre-conceptual (or non-conceptual) seeing, has introduced a distinction between sensation and cognition in the strict sense, which I consider both convincing in itself and helpful for an understanding of Ockham's position.[21] According to Dretske, we need to distinguish two different ways of encoding information. In the case of analog encoding, there is a continuous representation of a certain property or state of affairs. For instance, the speedometer of a car is an analog encoding of information about the vehicle's speed, because varying positions of the pointer represent the varying speeds. All the variations of speed are represented one-to-one by the speedometer. There is, however, a discrete representation in the case of digital encoding. The light on the dashboard that registers oil pressure, for example, is a digital device, as it only comprises two relevant positions: on and off. These positions are discrete because they do not convey any information about variable states of oil pressure. They are informationally parsimonious, as it were, because they just tell us whether or not there is enough oil in the engine – no additional information is given. Dretske suggests that this distinction between two ways of encoding information can be made for signs in general:

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[20] Of course, I am also able to imagine things I have never seen, for instance chimeras. But even in this case I first need an intuitive cognition of the parts chimeras are made of. Imaginary things are always complex objects based upon parts apprehended in acts of basic intuitive cognition.

[21] See F. Dretske, "Sensation and Perception", in *Essays on Nonconceptual Content*, ed. by Y. H. Gunther (Cambridge, MA: MIT Press, 2003), 25–41; repr. from F. Dretske, *Knowledge and the Flow of Information* (Cambridge, MA: MIT Press, 1981), 135–153, and idem, "Simple Seeing", in *Perception, Knowledge and Belief. Selected Essays* (Cambridge, NY: Cambridge University Press, 2000), 97–112.

> I will say that a signal (structure, event, state) carries the information that *s* is *F* in *digital* form if and only if the signal carries no additional information about *s*, no information that is not already nested in *s*'s being *F*. If the signal *does* carry additional information about *s*, information that is *not* nested in *s*'s being *F*, then I shall say that the signal carries this information in analog form. When a signal carries the information that *s* is *F* in analog form, the signal always carries more specific, more determinate, information about *s* than that it is *F*.[22]

Dretske illustrates this distinction by comparing a picture of a state of affairs to a statement about the very same state of affairs.[23] Suppose you have a cup full of coffee and want to communicate this piece of information to someone else. You could simply say: "This is a cup full of coffee." This statement carries the information in digital form because no other information than the simple fact that there is a cup full of coffee is given. No specific information is supplied about the size and the shape of the cup, about the color of the coffee or other details. If, on the other hand, you take a photograph of the cup, all the details become visible. In this case the information about the cup is conveyed in analog form, because more specific, more determinate information is given. This additional information is not conveyed when we receive a signal or a sign in digital form. That is why we may say that information in digital form is impoverished information compared to the rich information given in analog form. Yet what we gain when information is encoded in digital form, is a clear classification of the object about which information is conveyed. For if you say "This is a cup full of coffee", you classify the thing about which you want to inform someone as a certain type of thing – a cup – filled with a certain type of beverage – coffee.

Now let me return to Ockham's distinction between sensory and intellectual intuitive cognition. In both cases we deal with particular things, and in both cases we grasp the relevant thing as something existent, immediately present to us. Nevertheless, the two types of cognition are to be distinguished, because sensory intuitive cognition is pre-conceptual, involving no use of mental terms, whereas the intellectual one is conceptual. So what is the relevant difference? We can now try to give an answer by appealing to Dretske's distinction between the analog and the digital encoding of information. In the case of sensory intuitive cognition we receive information about an object present to us and encode it in analog form. Thus, when I see the apple in front of me, I have a rich picture that informs me about many details: the size of the apple, its shape, its color, its position on the table, etc. Using Aristotelian terminology, Ockham would say that I have rich information about all the proper and common sensible properties (*sensibilia*) present to me. As soon as I conceptualize this information by forming mental terms, I simply say (or think) "Here is an apple." Of course, I may add more statements and tell a long story about the apple. But no matter how long my story will be, I will hardly be able to capture all the subtle details I grasp all at once with my senses. My intellectual intuitive cognition is an impoverished form of cognition – a form that lacks the fine-grained

[22] Dretske (2003), 26.
[23] See ibid., 26–27.

character of sensory cognition. Nevertheless, I also gain something with intellectual cognition because I am able to categorize the object I see as an apple, and I can even form a general term for all objects that belong to this category. To use Dretske's terminology again, we may say that the conceptualization occurring in an intellectual intuitive cognition is a "digital conversion": the perceptual richness and fine-grainedness we loose in such a conversion is compensated by a system of conceptual classification.

In the light of this distinction, we can describe the various steps in the cognitive process as follows:

		Sensory cognition		Intellectual cognition
material thing	⟶	intuitive (analog encoding) e.g. seeing an apple	⟶	intuitive (digital encoding) e.g. formation of the mental term "apple", immediately followed by the judgment "Here is an apple"
		abstractive (analog encoding) e.g. imagining an apple		abstractive (digital encoding) e.g. formation of the mental term "apple" without an existential judgment

I hope this interpretation makes clear why Ockham insists on there being cognition both in the sensory and in the intellectual soul despite the fact that there is just one type of object, namely the particular thing, for both faculties. In his view, it would be inappropriate to assign a mere causal or an instrumental function to the senses, because they do not simply transmit inputs to the intellect, but have their own way of encoding information about particular things. To put it in a nutshell, we may say: whereas Aquinas explains the cognitive function of the senses by assigning them a special type of object (particulars as opposed to universals), Ockham gives such an explanation by assigning them a special type of information about particulars.

To avoid misunderstandings, it should be noted that having analog information does not amount to receiving an unstructured, chaotic mass of impressions. If I see an apple before conceptualizing what I see, I am not simply confronted with a mixture of indistinguishable colors. I clearly see *this* patch of color as being distinct from *that* one, and I am able to distinguish, say, a dark patch from a light one. The relevant point is not that I am utterly incapable of making distinctions, but that my distinctions are not based upon the use of concepts. That is, I do not distinguish a dark patch of color from a light one by subsuming the first under the concept "dark red" and the second under the concept "light red". I simply make a distinction on the basis of a phenomenal experience. Ockham takes this point into account when he discusses the so-called "natural judgments". He states that an animal or an infant who does not yet possess concepts is able to grasp various things, both harmful and beneficial ones, by means of the senses alone. Such a creature can even make a distinction between what is harmful and what is beneficial, because it is able to perform some kind of judgment which is, however, not identical with a full-fledged intellectual judgment, e.g. with the judgment "x is harmful/beneficial."[24] This judgment

[24] *Reportatio* IV.14 (OTh VII, 314): "Ad aliud dico quod sensitiva habet iudicium. Patet in brutis, pueris, fatuis etc., qui iudicant inter nociva et convenientia, sed non habent actum iudicandi distinctum ab actibus apprehensivis incomplexis, sicut intellectus habet."

is nothing more than a sensory discrimination of various features. Yet the fact that there is such a judgment – one might call it "sensory judgment"[25] – shows that the senses are very well able to distinguish various colors and other features present to them. For this reason it would be incorrect to characterize sensory cognition as a mere non-discriminative reception of information. The senses do make a distinction between various information they receive, even if this information is not conceptualized.

So far I have tried to explain Ockham's account of sensory cognition by comparing it to the analog information we get from pictures. Yet one should note that Ockham – just like Dretske – does not simply identify the analog form of encoding information with pictorial information. Quite on the contrary, he insists that we do not need inner pictures in order to have cognitive access to material things. We rather have *direct* access to things in the world by forming acts of sensory cognition.[26] The crucial point about sensory cognition is not that it is pictorial, but that it provides rich information about a certain thing, just like a picture provides rich information about the depicted thing or state of affairs. But sensory cognition is about an external thing (at least in the standard case), and the character of the information it conveys does not need to be pictorial. In fact, when sensory cognition is auditory or olfactory, there is no pictorial element at all and the cognitive act is about external things: we hear noises in the street, smell a perfume in the air, etc. Even in the case of imagination, i.e., when there is an abstractive sensory cognition, the cognitive act is directed towards an external thing, not towards an inner proxy, as Ockham makes clear: "All the things which the philosophers and the saint doctors call 'phantasms', 'effigies' and 'pictures' are the sensible things themselves, which have first been perceived and are then imagined, not species of the sensible things. It is the same man I have previously seen I now imagine, not a species of that man."[27] So when I am terribly hungry and visualize an apple, my act of imagination is not directed towards an inner apple, but towards a concrete, material thing I wish to eat. Ockham vigorously rejects the postulation of inner intentional objects.[28] Given his strong

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[25] This kind of judgment had a long history in medieval theories of cognition, as K. H. Tachau showed in "What Senses and Intellect Do: Argument and Judgment in Late Medieval Theories of Knowledge", in K. Jacobi (ed.) *Argumentationstheorie. Scholastische Forschungen zu den logischen & semantischen Regeln korrekten Folgerns* (Leiden: Brill, 1993), 653–668. It was mentioned by all medieval authors who followed Avicenna in postulating an estimative power, located in the inner senses, that distinguishes between various features of perceptible objects.

[26] He defends this thesis against Aureol's theory of "esse apparens" as well as against the defenders of sensible or intelligible species. In *Ordinatio* I.27.3 (OTh IV, 241) he firmly holds: "…in nulla notitia intuitiva, nec sensitiva nec intellectiva, constituitur res in quocumque esse quod sit aliquod medium inter rem et actum cognoscendi. Sed dico quod ipsa res immediate, sine omni medio inter ipsam et actum, videtur vel apprehenditur."

[27] *Reportatio* III.3 (OTh VI, 121): "Quia omnia illa quae a philosophis et sanctis doctoribus vocantur phantasmata, simulacra, idola, sunt ipsamet sensibilia prius sensata et post phantasiata, et non species sensibilium. Eundem enim hominem quem prius vidi, nunc imaginor, et non speciem hominis."

[28] For a detailed discussion of this rejection, see my *Theorien der Intentionalität im Mittelalter* (Frankfurt a.M.: Klostermann, 2002), 322–342.

defense of direct realism against all kinds of representationalism, it would be quite misleading to understand sensory cognition as an act that is directed towards inner pictures.

At this point someone may voice a seemingly naive, but important objection. Why does Ockham need sensory cognition at all? Would it not be ontologically more elegant to avoid a commitment to special cognitive acts in the senses and to hold that all cognitive acts occur in the intellect? Could the senses not be understood as assuming a mere causal function (they transmit inputs to the intellect and thereby trigger a cognitive act), not a cognitive one? Ockham would reject such a suggestion, as becomes clear when we look at the contexts in which he explains the function of sensory cognition. Let me mention three contexts.

The first context concerns the cognitive achievements of animals. Ockham repeatedly points out that animals have cognitive access to the world, despite their lack of an intellect and, consequently, their lack of conceptual cognition. He mentions the famous example of the sheep that sees the wolf and flees.[29] In his view, the sheep would not flee if it did not have a cognition of the wolf. Since this cognition does not involve any use of mental terms, the sheep must have some pre-conceptual form of cognition. Ockham does not spell out how exactly the sheep cognizes the wolf. He confines himself to saying that "the act of desiring [to flee] can be maintained by a mere cognition of the external sensible properties so that different sensible properties are to cause different acts of desire."[30] What exactly is the mere cognition of external sensible properties? And how does it cause an act of desire? I think Ockham's full explanation would run as follows. The sheep grasps many properties of the wolf when seeing it: its color, shape, size, etc. Lacking mental terms, the sheep does not conceptualize and categorize what it sees. Nevertheless, it possesses rich information about the wolf – that is, using Dretske's terminology again, profuse and specific information encoded in analog form. This pre-conceptual information alone makes the sheep flee, because it is built in such a way that a certain type of information immediately triggers an act of fleeing. Unlike human beings, it can not decide not to flee, nor can it say to itself: "Well, perhaps this is a tamed wolf and I should not be scared." Given that the sheep has no conceptual resources, it can not cognize the wolf as a wild or a tamed animal. Consequently, it cannot choose an action that would be appropriate for this or that conceptualization of the wolf. It simply does what it is biologically programmed to do. But the fact that it exhibits a certain behavior only in a specific situation (it does not flee when seeing a fellow-sheep or a mouse) shows that it must have a sensory cognition that plays a causal role. Ockham even claims that the sheep and other animals have sensory memory:

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[29] On the history of this example, which can be traced back to Avicenna, see my "Intentionality and Action. Medieval Discussions on the Cognitive Capacities of Animals", in M. C. Pacheco & J. F. Meirinhos (eds.), *Intellect and Imagination in Medieval Philosophy*, (Turnhout: Brepols, 2006), vol. I, 72–98.

[30] *Ordinatio* I.3.2 (OTh II, 411): "...per solam cognitionem sensibilium exteriorum potest actus talis appetitus salvari, eo quod diversa sensibilia sensata habent diversons actus appetitivos causare..."

they are able to store the sensory cognition they have acquired and use it at a later moment to bring about an action.[31]

A second context in which Ockham mentions the indispensable function of sensory cognition can be found in his discussion of life after death.[32] He points out that a human soul separated from the body is very well able to have intuitive and abstractive intellectual cognition. But what it lacks is an immediate sensory access to the world and, consequently, sensory intuitive and abstractive cognition. Thus, a separated soul can grasp the term "apple" and form judgments about an apple. But it is utterly incapable of knowing how an apple tastes or how it looks in a certain light. This is why a human being after death has impoverished cognition. Ockham hastens to add that there is a way of compensating this deficit. Since the senses were active before death, the soul acquired a certain disposition (*habitus*) based on sensory acts, and this disposition remains after death. Ockham states, "that it [sc. the separated soul] can use the disposition which was previously acquired in the body and which remains in the separated soul."[33] Thus, after my death I will still know how an apple tastes because I can reactivate the disposition of apple tasting, which I have acquired in this life when eating apples. Of course, one may wonder how such a reactivation is possible without there being a body. It looks as if the reactivation was a mere intellectual affair: I remember how an apple tasted and thereby reactivate previous acts. This seems to be a poor compensation, for it is one thing to actually have, as it were, the taste on the tongue, quite another one to merely remember the taste. But even if the compensation is hardly satisfactory, Ockham's appeal to a compensation for the loss of sensory cognition shows that he acknowledges a genuine form of pre-intellectual cognition that conveys its own type of information about sensory objects. If there were no such information, there would be nothing to be compensated.

Finally, Ockham also takes sensory cognition into account when he examines the origin of passions. Adopting the classification of passions that was prominent in his time, he distinguishes between sensory passions and passions of the will, and gives an elaborate explanation of the way sensory passions are generated.[34] His examples are pleasure, pain, and sadness.[35] In all three cases, the passions are not immediately caused by an external object. Instead, the immediate cause is a sensory cognition. Ockham gives the following argument for this thesis.[36] If a sensory passion were immediately caused by an external object, it would cease as soon as the object is destroyed or removed. Yet a sensory passion can very well prevail after the relevant

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[31] See *Reportatio* IV.14 (313–316).

[32] See *Reportatio* II.12–13 (OTh V, 256–294) for angelic cognition and *Reportatio* IV.14 (OTh VII, 286–290) for *post mortem*-cognition.

[33] *Reportatio* IV.14 (OTh VII, 285): "…ipsa potest uti habitu prius adquisito in corpore et remanente in anima separata."

[34] For a detailed discussion, see V. Hirvonen, *Passions in William Ockham's Philosophical Psychology* (Dordrecht: Kluwer, 2004), 75–99.

[35] See *Quaestiones variae*, 6.9 (OTh VIII, 251–272); *Quodl.* III.17 (OTh IX, 268–272).

[36] *Quaestiones variae*, 6.9 (OTh VIII, 251–252).

object has been destroyed or removed. Therefore, there must be something else, namely the sensory cognition of that object, that plays the role of the immediate cause. This is, no doubt, a plausible claim. Imagine that you are very pleased about a gift you have received. What immediately causes this pleasure is not the gift itself, but your cognition of the gift. For if you were not paying attention to the gift and not seeing it, you would not feel pleasure. So the gift itself is, strictly speaking, only the cause of the immediate cause of your pleasure. Now the important point is that the immediate cause is not an intellectual cognition. The mere act of seeing – not the act of conceptualization – causes pleasure.[37] This becomes even more evident in the case of pain, which Ockham discusses in great detail.[38] When a part of the body is hurt, he says, it is the sensory cognition of the injury that causes pain. One does not need to conceptualize the injury by using mental terms, say the terms "spraining of the ankle" or "lesion of the foot". Otherwise an infant who is not yet in possession of mental terms would never have pain. Here again, Ockham emphasizes that sensory cognition is an indispensable form of cognition that cannot be eliminated or reduced to intellectual cognition.

I hope the cases of animal cognition, *post mortem* cognition, and sensory passions I have briefly discussed make it clear that Ockham assigns an important role to pre-conceptual cognition. Yet his account of this type of cognition was not generally approved by his successors. Adam Wodeham harshly attacked his claim that we need a distinct intellectual intuitive cognition causing a judgment because a sensory intuitive cognition cannot play this causal role. In fact, Wodeham devotes the entire first question of his *Commentary on the Sentences* to this problem. He argues at great length for the thesis that a sensory intuitive cognition can and does indeed immediately cause a judgment.[39] Thus, it is my seeing of the apple that immediately causes my intellectual judgment that an apple is lying in front of me; no intermediary act of intellectual apprehension is required. Why does Wodeham attribute so much importance to this point? To understand the main thrust of his critique, we need to look at the way Ockham and Wodeham explain the relationship between the acts performed by the sensory and the intellectual soul.

Ockham holds that the sensory and the intellectual soul are really and not just conceptually distinct in a human being. He adduces a number of arguments to corroborate this thesis. His main argument concerns the fact that the sensory soul is always present in a body and therefore subject to material conditions, whereas the intellectual soul is not. Since they clearly have opposing properties, they cannot be

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[37] Admittedly, the case of the gift may be more complex. You may have a pre-conceptual cognition of the gift (e.g., you are thrilled by the beautiful color or the enchanting perfume) and at the same time a conceptual cognition (you grasp the beautiful thing as a gift, thereby categorizing it). Unlike animals and newborn infants, adult human beings hardly have pure pre-conceptual cognition. But the important point is that there can be – and often is – an immediate causal link between pre-conceptual seeing and feeling pleasure.

[38] See *Quodl.* III.17 (OTh IX, 268–272).

[39] Wodeham, *Lectura secunda*, prologus, 1.2 (vol. I, 9–11).

identical; only items that have the *same* properties can be identical.[40] In addition, Ockham points out that the acts performed by the sensory and the intellectual soul can contradict each other. For instance, someone can desire something with his senses and at the same time intellectually refuse that thing. Such a conflict would not be possible if sensory and intellectual soul were identical, for there cannot be contradictory or contrary acts in one and the same soul. Therefore, the conflicting acts must be performed by distinct souls.[41]

This insistence on a real distinction hints at an implicit dualism in Ockham's theory of the soul.[42] While subscribing to the Aristotelian theory of psychic faculties, he emphasizes that the various faculties cannot be attributed to one and the same soul. In his view, we need to distinguish between a materialized soul and a purely immaterial soul. This has an immediate consequence for the explanation of cognitive acts. If sensory and intellectual cognition are really distinct acts performed by really distinct souls, a sensory act alone cannot cause an intellectual judgment. Rather, the intellectual soul needs to come up with its own cognitive act that provides the foundation for a judgment. For that reason Ockham stresses the point that "every act of judging presupposes a non-complex cognition of terms *in the same power*, because it presupposes an apprehensive act."[43] To illustrate this point with the apple example, we may say that merely seeing the apple is not sufficient for the formation of the judgment "Here is an apple." Since the judgment consists of mental terms, there needs to be an act that produces these terms in the intellect. And this act cannot be identical with the mere act of seeing, because the two acts belong to really distinct souls. So we need (a) an act of seeing in the sensory soul, (b) an act of forming mental terms in the intellectual soul, and (c) an act of judging that is also formed in the intellectual soul. Act (b) functions as a bridge, as it were, between (a) and (c).[44]

This account of the relationship between various psychic acts shows that an ontological thesis is lurking in the background of Ockham's thesis according to which a sensory act cannot immediately cause an act of judgment: the two acts belong to ontologically distinct realms. Now it is exactly this thesis that Adam Wodeham attacks. While agreeing that one needs mental terms in order to make a judgment, he rejects the view that these terms are provided by a special act of the intellect.

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[40] See *Quodl.* II.10 (OTh IX, 159).

[41] See *Quodl.* II.10 (OTh IX, 157).

[42] This implicit dualism sparked a controversy about the unity of the soul in the fourteenth century. See H. Lagerlund, "John Buridan and the Problems of Dualism in the Early Fourteenth Century", *Journal of the History of Philosophy* 42:2 (2004), 369–387.

[43] *Ordinatio* I, prologus, 1 (OTh I, 21): "... omnis actus iudicativus praesupponit in eadem potentia notitiam incomplexam terminorum, quia praesupponit actum apprehensivum" (emphasis added).

[44] Note, however, that the introduction of such a bridge does not entirely resolve the problem of the real distinction between sensory and intellectual acts. For if the act of forming mental terms is an intellectual one, it clearly belongs to an ontological realm that is really distinct from that of sensory acts. So how can a sensory act *cause* an intellectual act, even if it is only a simple act of apprehension and not an act of judgment? Is there not an ontological gap between (a) and (b) as well as between (b) and (c)?

Rather, the sensory act alone suffices to provide terms. Wodeham argues as follows: "Each of our sensations is immediately received in the intellect and is an act of the intellect although, strictly speaking, no sensation is an intellection…"[45] This is an astonishing claim. What does it mean that a sensation is in some sense an act of the intellect?

Wodeham denies that sense and intellect are really distinct faculties. In fact, he explicitly says that they are merely two forms of one and the same soul.[46] If the senses perform an act, it immediately triggers the intellect – there is no need for some kind of bridge within the one soul. One could even say that the sensory act is immediately intellectualized, because it is immediately followed by and transformed into an intellectual act. For this reason, every sensory act is in some sense an intellectual act, as Wodeham says. This clearly shows that he does not accept the thesis that there is (at least in the case of human beings) pre-conceptual cognition that can, but need not be conceptualized. According to him, every sensory cognition is conceptualized. Thus, when I see an apple, this very act of seeing is "received in the intellect". For Wodeham, it does not make sense to speak of a pre-conceptual cognition of the apple that is really distinct from an act of conceptualization. For that reason he does not postulate a separate act providing us with mental terms.

Wodeham's critique of Ockham's account goes far beyond the correction of a small detail. It concerns a crucial point in the theory of sensory cognition and raises an important question. Should we assume that there is, as it were, a gap between sensory and intellectual acts so that we need a special act to fill this gap, an act that conceptualizes the pre-conceptual content of a sensory act? Or should we accept the claim that sensory and intellectual acts are tightly linked to each other in a single soul so that no gap needs to be filled?

2 Sensory Cognition and Knowledge

No matter how the relationship between sensory and intellectual acts will be explained, in the cases I have discussed so far it seems clear that we acquire correct information about a certain thing or state of affairs by means of our senses. However, ancient skeptics already pointed out that we can cite a number of cases in which it seems obvious that our senses mislead or even deceive us. For instance, we falsely think that a stick is bent when we see it partly submerged in water. Similarly, when we are standing on a moving ship and look at the trees on the shore, we falsely think that the trees are moving. These classical examples (and many more) were well known in the fourteenth century and widely discussed. As a number of recent commentators have shown, Peter Aureol, William Ockham, and Adam Wodeham

[45] Wodeham, *Lectura secunda*, prologus, 1.5 (vol. I, 15): "Quia omnis sensatio nostra recipitur immediate in intellectu et est actus intellectus, quamvis proprie loquendo nulla sensatio sit intellectio…" Ibid., 16: "…concedo quod visio sensitiva immediate recipitur in intellectu…"

[46] *Lectura secunda*, prologus, 1.2 (vol. I, 10): "…ad salvandum omnes actus quod in nobis experimur, sufficit una anima in nobis." See also ibid., 1.5 (vol. I, 15–16).

analyzed them in great detail and used them as a starting point for an *ontological* discussion.[47] They raised the fundamental question of what we see in all these situations: real things or mere "apparent things" with a peculiar status that needs to be explained? Although the debates focusing on this question played an important role, one should not overlook the fact that the fourteenth-century authors also raised an *epistemological* question: how can we ever trust our senses if their use often produces false cognition? Or to put it crudely: what is the use of sensory cognition, be it conceptual or pre-conceptual, if it often leads us straight into error?

Let me turn to Ockham's discussion of the relevant cases to give an answer to this question. As is well known, Ockham denies that perceptual errors arise because we see mere "apparent" or "intentional things" which are distinct from real things in the world. For instance, he denies that we see intentional trees or an intentional motion of the trees when we look at them from a ship. In his view, there simply are no such intentional entities. He firmly holds: "For no motion other than a real one, or one that can be real, is apprehended by the senses, just as no whiteness except for a real one, or one that can be real, is apprehended by the senses."[48] So perceptual error cannot have its origin in spooky intentional things that are mysteriously present to the senses. How then can such an error occur? Ockham is not at a loss for an answer. He says: "Yet because of the motion of the one on the boat, who is moving only with the motion of the boat, he sees those trees from various distances and angles. For this reason, the trees seem to be moving."[49] The important point is that the person on the ship sees *real* trees on the shore. But given the changing distances between the observer and the trees, they seem to go up and down. So strictly speaking, the senses do not make any error – they simply provide information about the position of the trees as they are present at this or that moment. An error arises only when the intellect, ignoring the special situation of the moving ship, gathers all the information and falsely concludes that the trees are moving. Consequently, the senses should not be blamed. It is the intellect that makes a false judgment, because it does not take into account the special situation in which the sensory information is acquired. Were the intellect carefully evaluating the fact that the trees are seen from a ship and therefore from a shifting place, it could avoid the mistake. For that reason, Ockham defends the view that the so-called sensory deception is in fact an *intellectual* affair. He unmistakably says that such a case "occurs only through an act of the intellect".[50]

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[47] See Tachau (1988), 89–100; McCord Adams (1987), 84–96; R. Pasnau, *Theories of Cognition in the Later Middle Ages* (Cambridge, NY: Cambridge University Press, 1997), 69–76; D. G. Denery, "The Appearance of Reality: Peter Aureol and the Experience of Perceptual Error", *Franciscan Studies* 55 (1998), 27–52. I also discuss this problem in Perler (2002), 274–283.

[48] *Reportatio* I.27.3 (OTh IV, 244): "Quia nullus motus nisi realis, vel qui potest esse realis, apprehenditur a sensu, sicut nulla albedo nisi realis, vel quae potest esse realis, apprehenditur a sensu." (Trans. by R. Pasnau, *The Cambridge Translations of Medieval Philosophical Texts, vol. 3: Mind and Knowledge*, Cambridge, NY: Cambridge University Press, 2002, 231.)

[49] *Reportatio* I.27.3 (OTh IV, 245): "Quia tamen illae arbores, propter motum exsistentis in navi qui non movetur nisi ad motum navis, in diversa distantia et aspectu videntur ab exsistente in navi, ideo videntur arbores illae moveri." (Trans., 232.)

[50] See *Reportatio* I.27.3 (OTh IV, 243).

Wodeham makes the very same point: it is not the sense of sight that is responsible for the mistake, but the intellect that forms a false judgment.[51]

This is an important conclusion for at least three reasons. First, Ockham (and, following him, Wodeham) makes it clear that the senses play their proper role in the cognitive process. This role is not merely causal or instrumental, but genuinely cognitive. For the senses provide a certain information about a state of affairs at a certain time. Thus, they present the trees as being far away or as being close to the ship, depending on the momentary situation. This information is present *before* concepts are used. Here again, one should not simply identify the information conveyed by the senses with conceptual information. Of course, the person on the ship can and usually does apply concepts in order to understand the situation. But this is something he or she does in a second step only. In a first step she simply picks up sensory information that gives her a certain impression of the situation. And this impression has no truth value, strictly speaking, because only judgments formed by the intellect have a truth value. Ockham illustrates this point by comparing human cognition to animal cognition. Should someone ask if it is possible for animals to have a cognition of moving trees, the answer should be both yes and no. No, because animals do not apprehend a special motion and they certainly do not come up with the explicit judgment that the trees are moving. Since they lack an intellect, they cannot form a judgment. But in some sense they can have a cognition of moving trees, because they can have a sensory cognition of real trees that first look far away and then close by, depending on the situation in which they are present. Just like us humans, animals have this pre-conceptual and pre-judgmental cognition that gives them a certain impression of their environment. Unlike humans, they do not fall into the trap of forming a false judgment, simply because they have no faculty enabling them to form any judgment.

Second, Ockham's explanation also makes clear that the famous hierarchy among the cognitive faculties, mentioned at the beginning of this paper, is not to be understood in the naive sense that the senses as the "lower faculty" are to be mistrusted whereas the intellect as the "higher faculty" is to be esteemed as the reliable faculty that corrects or perfectly controls the "lower faculty". On the contrary, since deception is an intellectual affair, it is the intellect that should be mistrusted. Or to be more precise, one should always critically ask how the intellect gathers sensory information and how it assesses it in a certain context. For instance, does the intellect take into account the fact that the information about the trees on the shore is acquired from a shifting place and not from a stable one? Making correct judgments on the basis of sensory information is always a complex affair that requires the location and evaluation of the particular piece of information in a given context.

Finally, Ockham's account of cases of deception shows that he does not see a radical skeptical threat in these cases. Of course, he acknowledges that such cases occur, closing his discussion of various examples with the statement: "Accordingly, when a sense is deceived (i.e., some deception occurs), a thing is judged to be such

[51] See *Lectura secunda*, prologus 4.6 (vol. I, 97).

as it is not, without any intermediary between the thing and the power's act."[52] So perceptual error does occur, and one need not posit strange intentional beings, located between real things and the perceiving person, to acknowledge this obvious fact. Yet this should not cause fundamental doubt about the possibility of cognition based on sensory information. For false judgments arise only in certain contexts in which not all the circumstances and "disturbing factors" (e.g. different distances and angles in which an object is perceived) are taken into account. If the circumstances are carefully evaluated and if all the special factors are taken into account, we can and in fact do come up with correct judgments. For that reason Ockham considers the heatedly debated cases of error to be special ones that can be eliminated or at least corrected.

Now a radical skeptic may be dissatisfied with this line of argument. How do you know, he or she may ask, what a special context is, and how do you distinguish between normal and non-normal circumstances? What are your criteria to evaluate a given situation? And how do you know that you are not in a special context at the very moment when you apply your criteria? Ockham does not address these questions, which were prominent in ancient skeptical debates. So, one might think that Ockham does not have a convincing answer to the skeptic. Pointing out that we can have correct judgments in normal situations (or in situations in which we take care of special circumstances) seems a rather weak strategy that does not provide a solution to the famous criterion problem.

Yet I do not think that Ockham's strategy is as weak as it may seem at first sight. It would be weak only if one were accepting a so-called "foundationalist strategy", i.e., a strategy that aims at an indubitable foundation for cognition – a foundation that could not be challenged by the skeptic and that would provide a secure basis for a system of knowledge. Ockham does not choose such a strategy – for good reason. Using modern terminology, we could say that he favors a *reliabilist strategy*. That is, he starts with the assumption that we have, in principle, well-functioning sensory and intellectual faculties that supply reliable information about the world, provided we use these faculties in an appropriate way. That is why we should not look for a first foundation. Instead, we should analyze how each faculty works and how the two faculties cooperate. The best way to do this is to focus on a simple situation in which we clearly see how intuitive and abstractive cognition work, in the senses as well as in the intellect. We can then proceed to more complex cases and eventually to cases in which special factors play a role. But we should assess these non-standard cases against the background of standard cases, i.e., of cases in which we get reliable information about the world.

If we understand Ockham's procedure on these lines, it is not surprising that he does not see a radical skeptical threat in the cases of deception. These cases, which he clearly delimits from veridical ones, are non-standard cases for which "special

[52] *Reportatio* I.27.3 (OTh IV, 251): "Unde quando sensus decipitur, hoc est, est occasio deceptionis, res iudicatur talis qualis non est, sine omni medio inter rem et actum potentiae." (Trans., 236).

factors" can be indicated. In fact, Ockham discusses any of the classical cases and indicates the factor that is responsible for the false judgment in each of them: in the case of the moving trees, it is the varying distance to the ship; as to the stick that appears to be bent, it is its position in the water, etc. In his view, it would be inappropriate to conclude that we should *always* mistrust our perceptual judgments only because they may turn out to be false in *some* cases. This is an important point, well known in modern debates thanks to John Austin who sharply remarked: "... it is important to remember that talk of deception only *makes sense* against a background of general non-deception. (You can't fool all of the people all of the time.) It must be possible to *recognize* a case of deception by checking the odd case against more normal ones."[53] Ockham could fully subscribe to this statement: talk of non-veridical perception only makes sense against the background of veridical perception. And veridical perception is possible (and in fact often occurs) because the cognitive faculties are built in such a way that they work correctly under normal conditions. Ockham even explicitly says that "that which leads the intellect into error should not be posited in the intellect."[54] Nor should it be posited in the senses because they are designed to provide reliable information.

Locating Ockham's explanation of so-called sensory deception within the framework of a reliabilist theory helps us not just to understand the way he deals with skeptical challenges, but also to see the general purpose of his theory of sensory cognition. He does not aim at denigrating the senses or at blaming them for cognitive error. Unlike Descartes three centuries later, Ockham does not intend to "lead away the intellect from the senses" in order to find a secure ground and to focus on the achievements of the intellect.[55] Instead, he is concerned with the role the senses play in the complex cognitive mechanism that enables us to have access to the world. As an Aristotelian empiricist, he is convinced that we cannot give an account of this mechanism unless we carefully analyze how the senses work under normal conditions and how they cooperate with the intellect. Only this kind of analysis will give us an insight into the way we acquire information about the material world.

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[53] J. Austin, *Sense and Sensibilia*, ed. by G. J. Warnock (Oxford: Oxford University Press, 1962), 11.

[54] *Reportatio* II.12–13 (OTh V, 281): "... illud quod ponit intellectum in errore non debet poni in intellectu."

[55] See the synopsis of the *Meditations on First Philosophy*, in *Oeuvres de Descartes*, ed. by P. Adam & Ch. Tannery, vol. 7 (Paris: Vrin, 1983), 12.

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Horse Sense and Human Sense: The Heterogeneity of Sense Perception in Buridan's Philosophical Psychology

Jack Zupko

We are all familiar – perhaps all too familiar – with the Cartesian problem of how the mind is related to the body. On this account, the problem is how to explain the relation between the immaterial human mind and its extended or material body. How is the mind able to direct the movements of the body and be affected by bodily sensations, given their fundamentally different natures?

Medieval philosophers were less interested in this problem in part because they viewed the theoretical landscape differently. On the one hand, they were influenced by Aristotle's *De Anima* and the commentary tradition that surrounded it to regard the human soul as a tripartite entity, whose different parts reflect Aristotle's broader taxonomy of life forms as vegetative, sensitive, or intellective.[1] The hard questions about the relation between its material and immaterial aspects are less apparent if it is assumed at the outset that the same thing can operate both materially and immaterially, as if nourishing and sensing and understanding were simply different modes of the same thing – alternative ways its animate nature becomes evident to us.

On the other hand, medieval philosophers were influenced by the Neoplatonic and Stoic traditions to gloss over the problem of mind/body interaction on account of the immaterial soul's great pre-eminence over the body: since the soul is so much nobler than the body, it was generally assumed that the soul can do what it wills with its body (at least in its original natural state, prior to the Fall) not unlike the way in which God exercises causal agency over creation. Because movement or sensation thus conceived is not a relationship between equals, the question of how an immaterial thing can affect a material thing is less problematic, though of course

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[1] Aristotle specifically mentions the "serial" character of his account of the soul: "The cases of figure and soul are exactly parallel; for the particulars subsumed under the common name in both cases – figures and living beings – constitute a series [ta ephexês], each successive term of which potentially contains its predecessor, e.g., the square the triangle, the sensory power the self-nutritive" (*De an*. II.3, 414b28; trans. J. A. Smith in J. Barnes (ed.), *The Complete Works of Aristotle*, Revised Oxford Translation, Bollingen Series, 71.2 (Princeton: Princeton University Press, 1984), 660).

S. Knuuttila, P. Kärkkäinen (eds.), *Theories of Perception in Medieval and Early Modern Philosophy,*

there is some awkwardness when the causal vector goes in the other direction, as when the immaterial soul seems to be affected by the lesser, material things in sense perception. But such difficulties seemed only local, and natural philosophy was quickly pressed into service to save the phenomena. Thus, we have thinkers such as William of Conches and Thierry of Chartres developing the Platonic theory of the visual ray – the '*vis ignea*' in Calcidius's translation of the *Timaeus*[2] – which, having been sent out by the eye, strikes an object and "diffuses itself by its natural fluidity" over its surface, returning to the eye with the shape and color of the object. In this way, the soul's agency is preserved all the way down the causal chain.[3]

Despite these differences, however, problems similar to the Cartesian one sometimes broke out on other fronts. What we find here are worries not about mind/body interaction per se but rather about whether certain animate functions such as nutrition and sensation are the same *between different species*, or in Aristotelian terminology, whether the sensory souls of a man and a horse have the same nature, or even whether the vegetative souls of plants, brute animals, and human beings are the same sort of thing. In slightly more modern terminology, this is the question of whether the terms 'vegetative soul' and 'sensitive soul' refer to anything like natural kinds. Similar concerns are raised at the beginning of Books I and II of *De anima*, where Aristotle considers the definition of the soul, but they are set aside once he hits upon the idea that the natural philosopher restricts himself to discussing the materially evident properties of living things rather than their ultimate nature, with the latter task belonging to the metaphysician.[4] The subalternate science of psychology addresses itself to the phenomena, leaving the question of their source to the higher science of metaphysics.

The question is somewhat obscured in Aristotle thanks to his doggedly functional approach to the soul, which invites the natural philosopher to compare

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[2] *Timaeus a Calcidio Translatus Commentarioque Instructus*, ed. J. H. Waszink, Plato Latinus IV (London – Leiden: Warburg Institute and E. J. Brill, 1962), 42, l. 9 (= 45E).

[3] Note the active form of the verb: the visual ray "diffuses itself" rather than being diffused. William of Conches, *Dragmaticon Philosophiae* VI.19, trans. I. Ronca and M. Curr, *William of Conches: A Dialogue on Natural Philosophy* (Notre Dame, Ind.: University of Notre Dame Press, 1997), 157. See also Thierry of Chartres, *Tractatus de sex dierum operibus* 11–13, ed. N. M. Häring, *Commentaries on Boethius by Thierry of Chartres and His School* (Toronto: Pontifical Institute of Mediaeval Studies, 1971), 560. It would seem that the agency problem arises again as long as the *vis ignea* is at some point affected the color and shape of the object, but I am unaware of any medieval author who was troubled by this. Presumably, it was enough that the object does not do anything *actively* to cause its color and shape to be perceived.

[4] See Aristotle, *De an*. I.1, 403a25–b19. Nevertheless, medieval commentators sometimes asked whether the various definitions of the soul offered in *De an*. II.1–2 are nominal or real or both, occasionally expressing doubts about whether knowledge of the real essence of the soul is even attainable in this life. For discussion see G. Klima, 'Buridan's Theory of Definitions in his Scientific Practice', in J. M. M. H. Thijssen and J. Zupko (eds.), *The Metaphysics and Natural Philosophy of John Buridan* (Leiden-Boston-Köln: E. J. Brill, 2001), 29–47, and Chapter 13 of J. Zupko, *John Buridan: Portrait of a Fourteenth-Century Arts Master* (Notre Dame, Ind.: University of Notre Dame Press, 2003).

animate functions across different species *as if* the same principle underlies horse sense and human sense, plant nutrition and dog nutrition. This is a useful way of classifying things if one is interested in external or material similarities, but if one takes seriously the metaphysical unity of the soul, its tripartition only postpones the important question: What do the sensory and vegetative functions of human beings have to do with those of plants or brute animals if the latter are *fundamentally* different sorts of things, i.e., if human souls and plant or animal souls differ at their source?

To worry about this question one must leave Aristotle behind and take a more synoptic view of the science of psychology. Among later medieval philosophers, John Buridan was someone who took the unity of the soul seriously and who brought that assumption into conversation with Aristotle's more functionalist approach.[5] In the third and final version of his lectures on Aristotle's *De anima*, Buridan sees that the unity assumption raises questions about the inter-species identification of the soul's parts or aspects at every level at which vivification occurs, for if it is the same soul which thinks, senses, and is nourished, then sensation and nourishment will be *specifically* different powers in creatures with material rather than immaterial souls. The specter is thereby raised that human souls are different from run-of-the-mill animal and plant souls, all the way down to their modes of sensation and nourishment. Besides undermining the Aristotelian conception of psychology as a single science, this invites the further conclusion that non-human animal and plant souls have more in common with machines than they do with us – a step Descartes was only too happy to take.

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[5] There is some awareness of the problem prior to Buridan. Thomas Aquinas, for example, considers the objection that "if the sensitive soul in a human being is indeed incorruptible, then the sensitive soul of a human being and of a horse will not be in the same genus," which, given that we call something an animal on account of its sensitive soul, would mean that "a human being and a horse would not belong to a single genus, 'animal' – which is clearly false." He replies by setting aside the objection as based on a mistaken assumption: it is the entire composite of a human being or horse that belongs to the same genus, not the sensitive soul "considered in itself [*secundum se*]," even though "logically speaking" we might consider them "as regards some common intention [*logice loquendo, secundum aliquam intentionem communem*]" (*Questions on the Soul* 11, obj. 14; ed. J. H. Robb, *St. Thomas Aquinas: Quaestiones De Anima* (Toronto: Pontifical Institute of Mediaeval Studies, 1963), 168, 175; cf. *Summa theologiae* I.76.2, ad 2). But this seems only to parry, or perhaps even to beg, the question, which is that the *very principles themselves* by which we classify horses and human beings as animals are specifically different, regardless of what the composites look like. The worry remains that the corresponding natural science will be a science of "common intentions" only, with no basis in reality. As far as Thomas is concerned, I would agree with Robert Pasnau that he "does not bother to distinguish between animal sensation and human sensation" because "he sees no fundamental difference between the two," as we see in his *Quodlibetal Questions*: "The operation of the sensory capacity is carried out in the same way in a human being and an animal; for a human being sees through the eye in the same way [*eodem modo*] that a horse does" (*QQ* 10.4.2C quoted in R. Pasnau, *Thomas Aquinas on Human Nature* (Cambridge: Cambridge University Press, 2002), 58).

1 The Unity Thesis

Buridan defends the unity of the soul in Book III, Question 17 of the aforementioned *Questions on Aristotle's 'De anima'*, which asks whether the intellective soul in a man is distinct from the sensitive soul.[6] A similar question is raised in Book II, Question 4 about the vegetative and sensitive souls in an animal, and Buridan explicitly connects the two discussions, indicating to his audience that these two loci of his commentary are part of the same account:

> In answer to this question I offer the following conclusion: that there is no intellective soul in a man distinct from the sensitive soul, but rather, they are the same thing, which is proved just as it was proved in the second book of this commentary as regards the sensitive soul and vegetative soul in an animal.[7]

In that earlier discussion, Buridan presents a number of commonsense arguments (*rationes probabiles*) on behalf of the unity thesis.[8] First, if the sensitive and vegetative souls of a horse were distinct, then God could remove the former, making the horse into a plant – which is absurd.[9] Second, we get an appeal to the preeminence principle: the vegetative soul would be nobler than the sensitive soul if the two were distinct, since the vegetative soul acts in nourishing itself whereas the sensitive soul is merely receptive of sensible species coming to it from the outside. Third is a worry about hypostatizing differences in a way that would undermine the whole notion of genus and species classification: a dog and a horse have the same substantial nature qua sensitive, Buridan says, but differ through forms that have been added to their sensitive souls; thus, presumably, the dog's acute sense of smell does not come from a new and special kind of canine soul, but is merely a perfection of the olfactory power of his sensitive soul, a nature he shares with other animals. The same is true of an apple and a pear, which "do not differ in their substantial nature through the vegetative soul, but through other specific forms", stemming from their nature.[10]

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[6] *QDA*$_3$ III.17, ed. J. A. Zupko in *John Buridan's Philosophy of Mind: An Edition and Translation of Book III of his 'Questions on Aristotle's De Anima' (Third Redaction), with Commentary and Critical and Interpretative Essays* (Ph.D. diss. Cornell University: (UMI #9001313), 1989), 189, ll. 1–2: "Quaeritur septimo decimo utrum in homine sit una anima intellectiva alia ab anima sensitiva."

[7] *QDA*$_3$ III.17 (ed. Zupko 1989, 192, ll. 78–81): "Et ego pono in ista quaestione istam conclusionem: quod non est in homine anima intellectiva alia a sensitiva, sed eadem, quod probatur sicut probatur in secundo libro de anima sensitiva et vegetativa in animali."

[8] *QDA*$_3$ II.4, ed. P. G. Sobol in *John Buridan on the Soul and Sensation: An Edition of Book II of His Commentary on Aristotle's Book of the Soul, with an Introduction and a Translation of Question 18 on Sensible Species* (Ph.D. diss., Indiana University: (UMI #8506133), 1984), 48–54). Buridan's explicit aim in these arguments is "to disprove 'those who advocate' the multiplication of forms according to the multiplication of quidditative predicates [improbare istam multiplicationem formarum secundum multiplicationem praedicamentorum quidditativorum], but he does not further identify the target of his remarks. For discussion, see Zupko (2003), 167–170.

[9] Of course, in the ordinary course of nature the soul has no removable parts, or at least none that can be removed without annihilating it.

[10] *QDA*$_3$ II.4 (ed. Sobol 1984, 52): "pirus et pomus non differant secundum rationem substantialem per animam vegetativam sed per alias formas suas specificas."

In his next argument against those who would differentiate souls on the basis of their operations alone, Buridan points out that we could not then assume that the vegetative souls of a man, a horse, and a fish have the same basic nature, because we do not observe that they nourish themselves similarly, or form similar flesh and similar limbs. But surely it is the same animate power that generates whatever appendages are naturally suited for an organism's place in the order of creation: fins if you are a fish, hooves if you are a horse, and arms and legs if you are a human being.[11] As we shall see, this argument is a little disingenuous because Buridan himself maintains that the vegetative and sensitive souls have a radically different nature in a human being than they do in a horse or a fish, though the principle does hold for all non-human living things.

The warrant for these inter-species comparisons emerges in his final argument. To paraphrase his remarks, we do not argue from the existence of diverse operations in the intellect (e.g., understanding, willing, apprehending), in the vegetative souls of plants (e.g., nourishment, growth, foliation, bearing fruit), or even from the natural dispositions of elements (e.g., the cooling and moistening capacities of water), to a diversity of substantial forms. Operational diversity is an indicator of substantial diversity, but not a definitive indicator. That is because our conclusions about which operations are really – as opposed to just nominally – distinct are constrained by principle of preeminence, which Buridan applies here to argue that forms of a superior degree and greater actuality subsume, in their nobler operations, the operations of lesser forms, in the way that a mixture is said to retain the qualities and capacities of its predominant elements.[12] This enables him to accept a fairly strong version of the unity thesis both microcosmically, as regards the metaphysical unity of individual souls, and macrocosmically, across different soul 'populations', since most of the similarities and differences we observe are natural consequences of the order of creation, which becomes evident to us in the orderly arrangement of natural kinds.

2 The Heterogeneity Thesis

The first hint we get that the animate powers of human beings differ from those of *any* other kind of living thing is in Book II, Question 5 of Buridan's commentary, where he asks whether the soul's powers are distinct from the soul itself.

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[11] Buridan's argument for this (given not here, but in the last question of Book III of his commentary) is the straightforwardly Aristotelian one that material form follows function: "And so too, brute animals through sense and sensory appetite move their nerves and limbs with the movements needed to move the entire animal from place to place. Hence, different corporeal organs are required for different movements, e.g., feet for walking and wings for flying, the details of which should be looked into in [Aristotle's treatise] on animals [Et tunc etiam illa bruta per sensum et appetitum sensitivum movent nervos et membra motibus requisitis ad motus illos totales ipsorum animalium de uno loco ad alterum. Unde requiruntur organa diversa corporea ad diversos motus, ut pedes ad ambulandum et alae ad volandum, de quibus determinandum est particulariter in libro de animalibus]" (*QDA*$_3$ III.20, ed. Zupko 1989, 219, ll. 105–111).

[12] *QDA*$_3$ II.4 (ed. Sobol 1984, 53–55). For discussion, see Zupko (2003), 169.

Not surprisingly, he answers in the negative. But along the way he tries to ground the different names we use for the soul's powers by means of a distinction between principal and dispositional or instrumental powers. Principal powers are those that follow directly from the nature of the soul: thinking for the intellective soul, sensing for the sensitive soul, and nutrition and growth for the vegetative soul. Dispositional or instrumental powers, on the other hand, are what the soul needs in order to exercise its principal powers. Thus,

> . . . although the soul is the active principle of nutrition, natural heat and various dispositions of the soul and body work together in nutrition as instrumental agents which the soul uses to bring about nourishment, just as the blacksmith uses a hammer and fire. And in the same way, the sensitive soul uses sensible species and particular dispositions of bodily organs for sensing. The same is true of the power of local motion. And the soul also uses intelligible species to form an intellection.[13]

This distinction allows Buridan to say that although the soul of a horse is homogenously present in each part of its body, it cannot see through its foot because it lacks the mediating qualitative dispositions that would permit sight to be exercised there.[14] In response to what looks to have been a student query, he distinguishes further between the proximate and remote exercise of such powers:

> But it is reasonable for you to ask whether the soul in the foot of a horse is capable of seeing. And I say that it is, speaking of a principal and remote potentiality, because in itself it is naturally suited to see and would see in its foot if God and nature were to form an eye in the foot for it. But it is not in the foot as a proximate potentiality for seeing because by 'proximate potentiality', we must understand either the necessary dispositions together with the principal agent or the principal potentiality itself in possession of the dispositions it needs to operate. And when it is without them, it is called a 'remote potentiality'. And that [remote] potentiality is not posited pointlessly in the foot, since it exercises other operations [i.e., besides seeing] there.[15]

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[13] *QDA*$_3$ II.5 (ed. Sobol 1984, 64–65): ". . . licet anima sit principale activum nutritionis, tamen calor naturalis et plures dispositiones animae et [et//vel] corporis coagunt ad nutritionem tanquam agentia instrumentalia quibus anima utitur ad agendum nutritiones, sicut faber igne et malleo. Et sic anima sensitiva ad sentiendum utitur specie sensibili et certis dispositionibus organi. Et ita de motiva secundum locum. Et intellectus etiam utitur specie intelligibili ad formandum intellectionem."

[14] Even with regard to touch, whose organ is presumably the animal's entire fleshy body, Buridan argues for diversity: "the sense of touch is not absolutely the same in a horse's foot and ear, but there are quantitatively distinct body and soul parts in them [non est simpliciter idem tactus in pede equi et in aure, sed in eis diversitas quantitative partium corporis et animae]." (*QDA*$_3$ II.19, ed. Sobol 1984, 330).

[15] *QDA*$_3$ II.5 (ed. Sobol 1984, 66–67): "Sed tu rationabiliter queris utrum anima in pede equi sit visiva. Et ego dico quod sic, loquendo de potentia principali et remota, quia secundum se innata est videre, et videret in pede si Deus et natura formarent sibi oculum in pede. Tamen ipsa non est in pede potentia propinqua ad videndum, quia per potentiam propinquam debemus intelligere vel dispositiones requisitas cum principali agente vel ipsamet principalem potentiam habentem suas dispositiones requisitas ad operandum. Et cum est sine illis vocatur potentia remota. Nec est ista potentia frustra in pede, quia ibi exercet alias operationes." Likewise, in his commentary on Aristotle's *De motibus animalium*, Buridan argues that since it is the form of the body, the soul of an animal exists throughout its whole body, "but only in the heart insofar as it is the first mover of

The hard, ungulate matter of the hoof is just right for exercising another principal power of its animal soul: that of locomotion, or motion from place to place.

At the risk of anachronism, let me suggest that the picture Buridan is painting here is of the soul as closed loop of electrical current, which powers the different animate operations connected to it by 'switching on' or vivifying particular bodily dispositions. As he puts it elsewhere,

> … if there were an eye in the foot in the same way as there is in the head as far as its qualitative dispositions are concerned, we would undoubtedly see with the foot's eye just as we do with the head's eyes. For the substance of the soul, which is naturally suited to exercise its every operation wherever the organic dispositions necessary for it are present, exists everywhere throughout the whole body.[16]

There is need for order in matter, too. Buridan picks up from Aristotle the habit of ascribing the ordination of matter, the demiurgic activity of Plato's *Timaeus*, to Nature personified,[17] i.e., to the principle through which elemental matter is properly arranged in the bodies of living things, so that they occur in proportions suitable for the execution of the various animate functions. There must be enough fire in the stomach to heat the food passing through it, the eye must be made of stuff watery enough to register subtle changes in light and color, the flesh must be warm and 'quick' enough – not too 'earthy', as in plants – to serve as a temperate mean for external movements between hot and cold, and so on.[18] Matter is recalcitrant, however, as matter is wont to be, and sometimes defies Nature's best efforts to arrange it into a properly functioning sense organ. When that happens, the soul remains like the eye in the foot: a remote and unrealized potentiality, lacking the 'right stuff' through which to exercise its animate operations: "sometimes the matter is badly

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the body" (*DMA* VI, ed. F. Scott and H. Shapiro, 'John Buridan's *De motibus animalium'*, *Isis* 58 (1967), 551). For further discussion, see Zupko (2003), 165–167.

[16] *QNE* VI.3, in John Buridan, *Quaestiones super decem libros Ethicorum Aristotelis ad Nicomachum* (Paris: 1513), photomechanically repr. as *Super decem libros Ethicorum* (Frankfurt a. M.: Minerva, 1968), f. 119ra: "unde si oculus esset talis in pede qualis est in capite quantum ad qualitativas dispositiones, utique nos oculo pedis videremus sicut oculo capitis. Ubique enim per totum corpus est animae substantia quae innata omnem suam operationem exercere ubi fuerit organicae dispositiones ad hoc requisitae."

[17] See Aristotle, *De an.* III.9, 432b21 and Buridan, *QDA*$_3$ III.19 (ed. Zupko 1989, 208, ll. 1–2): "Nineteenth, it is asked whether Nature does anything pointlessly or is sometimes lacking in things that are necessary [Quaeritur decimo nono utrum natura faciat aliquid frustra vel deficiat aliquando in necessariis]."

[18] Heat is the most important quality of many sense organs, including the heart and the brain, rival candidates for the organ of the five interior senses: common sense, memory, imagination, fantasy, and the estimative or cogitative power. Buridan remarks that this organ "is not made in the same way as the flesh or nerves of your finger," which explains why, "when a pig is killed and you cut it open immediately, you will feel in its heart or brain a much more intense heat than the heat in your fingers [non est eiusdem complexionis cum carne vel nervo digiti tui … Unde si occidatur porcus et statim dividendo tu aperies eum, tu senties in corde vel in cerebro caliditatem multo intensiorem quam sit caliditas digitorum tuorum]" (*QDA*$_3$ III.2, ed. Zupko 1989, 16, ll. 137–41). In Questions 23–24 of Book II, Buridan argues that the five interior senses are one and, following Aristotle, that they are seated in the heart rather than in the brain, as Galen and Avicenna had held. For discussion, see Sobol (2001), 194–196.

disposed in its qualities and not very obedient to natural agency, e.g., if the matter is too dry, it is not very extendable … and if it is too moist and soft, it is too easily extended."[19] The result is disproportion and deformity: heads that are too small, limbs that form in the wrong places and other phenomena classified by medieval natural scientists under the heading of monstrous births.

It turns out, however, that the similarities between human souls and plant or animal souls are only material. Human souls are powered by an altogether different kind of electricity:

> I say that in a human being, the instrumental powers of the soul are certainly extended [in its body] and diverse, but no principal power of the soul is extended in it, i.e., neither the principal sensitive power nor the principal vegetative power. I also say that the principal sensitive and vegetative powers are as everlasting and separable from the body as the intellective power, and although it is possible for the human soul to understand in a separated state, it is not possible for it to nourish itself naturally or to sense using sensory organs in a separated state, on account of its lacking the instrumental powers. In things other than human beings, however, the sensitive and vegetative powers are corruptible and inseparable from the body.[20]

This much follows from the unity thesis, since if the soul really is one thing, it cannot 'lose' parts in disembodiment or regain them should the body be resurrected. But Buridan sees what then follows from this. What follows from it is that the human soul is unique among the different kinds of souls or principles of life, and that its relation to the body will require special treatment going beyond the boundaries of natural philosophy. Indeed, when he asserts the unity thesis as regards the human soul in Book III, Question 17,[21] his remarks are prefaced by a pair of theological arguments he says "produce great faith" in him. Notice he does not say that they produce knowledge (*scientia*):

> I can add theological arguments that for me produce great faith in this matter. One of them is that the son of God assumed a complete and entire humanity. Therefore, since the sensitive soul belongs to the entirety of a human being, he assumed it. And he gave up nothing that he assumed. Therefore, he did not give it up in death, and so it was not corrupted in death. And yet those who claim that it is substantially distinct from the intellective soul claim that it is corrupted in death. Therefore, etc.

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[19] *QP* II.12, in Johannes Buridanus, *Subtilissimae Quaestiones super octo Physicorum libros Aristotelis* (Paris: 1509), photomechanically repr. as *Kommentar zur Aristotelischen Physik* (Frankfurt a. M.: Minerva, 1964), f. 38^{vb}: "aliquando est materia male disposita in suis qualitatibus et non bene obediens naturae agenti, ut si materia sit nimis sicca non est bene extensibilis … et si sit nimis humida et mollis extenditur nimis."

[20] *QDA*$_3$ II.5 (ed. Sobol 1984, 68–69): "dico quod in homine virtutes animae instrumentales bene sunt extensae et diversae, sed nulla virtus principalis animae in eo est extensa, scilicet nec virtus principalis sensitiva nec virtus principalis vegetativa. Dico etiam quod virtus principalis sensitiva et vegetativa ita est perpetua et separabilis a corpore sicut potentia intellectiva. Sed possibile est eam separatam intelligere, et non est possibile eam separatam nutrire naturaliter vel sentire organice, propter defectum potentiarum instrumentalium. In aliis autem quam in hominibus, potentiae sensitivae et vegetativae sunt corruptibiles et inseparabiles."

[21] See footnote 6 above.

> Again, the prophet David says of Jesus Christ in the Psalm, "you will not suffer your Holy One (that is, Christ) to see corruption" [Ps. 16.10=15.10 (Vulgate)] and yet, he would have suffered corruption if his sensitive soul had been corrupted in death. Therefore, etc.[22]

This leads Buridan to suggest an analogy. "I imagine," he says, "that just as God is principally and immediately present to the entire world and to each and every one of its parts, so in a certain way is the human soul immediately present to the entire human body," though even this analogy is imperfect "because God is not a form inhering in the world, but the soul informs the body and inheres in it."[23]

How, then, is the human soul related to the body it animates? Here Buridan bites the bullet. In Book II, Question 9, he notes that if the act of sensation is realized in the sense organs materially and in an extended fashion, we have a problem in the case of human beings:

> … since we are assuming that the human soul alone is indivisible and unextended, its sensation must either be educed from a material potency or else be uniquely educed from the potency of an indivisible, unextended intellective soul. If in the first way, I have what was proposed [in the other cases of sensation, i.e., that sensation is educed from the potency of matter]. If in the second way, this seems impossible, viz., that that which is uniquely educed from the potency of an indivisible and unextended subject is divisible and extended.[24]

Buridan must confront the problem raised by the second way again because of the unity thesis: if the soul is indivisibly one and has no parts, then sensation and intellection (and nutrition and growth, for that matter) must enact the same kind of operation. But that appears to sever the connection between the human soul and the flesh-and-blood activities of our sense organs.

Buridan's response to this remains the most dramatic moment in the 25 questions of Book II of his commentary:

> It is certainly true that there is a great difficulty if we posit just one soul in a human being, for it must be intellective and indivisible, not extended in any way by the extension of matter or subject. And then that unextended soul is also a sensitive and vegetative soul. How, then – since sensation is supposed to be materially extended in organs – could it be

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[22] *QDA*$_3$ III.17 (ed. Zupko 1989, 192, ll. 82–93): "Et possum addere rationes theologicas quae mihi in hoc faciunt magnam fidem, quarum una est quod filius dei assumpsit sibi totam humanitatem et integram. Ideo cum anima sensitiva sit de integritate hominis, illam assumpsit. Et nihil dimisit quod assumpsit. Ergo illam in morte non dimisit, et sic in morte non corrumpebatur. Et tamen dicentes eam esse substantialiter distinctam ab intellectiva dicunt eam corrumpi in morte. Ergo, etc. // Item David propheta dicit de Jesu Christo in Psalmo, "non dabis sanctum tuum (id est, Christum) videre corruptionem" et tamen fuisset passus corruptionem si eius anima sensitiva fuisset corrupta in morte. Ergo, etc."

[23] *QDA*$_3$ III.17 (ed. Zupko 1989, 192, ll. 94–97): "ego imaginor quod sicut deus assistit toti mundo et cuilibet parti eius principaliter et sine distantia, sicut quodammodo anima humana assistit toti corpori humano sine distantia. Differet tamen, quia deus non est forma inherens mundo, anima autem informat corpus humanum et inheret."

[24] *QDA*$_3$ II.9 (ed. Sobol 1984,136): "Item cum ponamus solam animam in homine quae est indivisibilis et inextensa, oportet quod sensatio vel sit educta de potentia materia vel sit solum educta de potentia animae intellectivae indivisibilis inextentis [inextentis//extentis]. Si primo modo habeo propositum. Si secundo modo hoc videtur impossibile, scilicet illud quod solum eductum sit de potentia subiecti indivisibilis et inextensi sit divisibile et extensum."

> inherent in an indivisible subject and, as it were, derived from its potentiality? This seems to be miraculous, since the only extension form has is extension in its subject. And how could a divisible and extended thing inhere in an indivisible and unextended thing? This seems to be miraculous. And I reply with certainty that it is miraculous, because the human soul inheres in the human body in a miraculous and supernatural way, neither extended nor derived from the potentiality of the subject in which it inheres, and yet also inhering in the whole body and in each part of it. This is truly miraculous and supernatural.[25]

Just in case you missed it, the operation of the human senses is miraculous![26] Now, I will not say much more about this because, well, there is not a lot to say – there are few better conversation-stoppers than appealing to the miraculous. But two things should be noted. The first is that the sort of miracle involved here is of the mundane or unexceptional sort, like the miracle of the real presence of Christ in the Eucharist, which occurs whenever the Mass is celebrated, or the miracle of God's immediate presence, *sine distantia*, to the whole of creation, which occurs at each and every moment of creation. Both of these are said by Buridan to be analogous to the way in which the immaterial human soul inheres in its body.[27] The second thing to notice is that this does not mean the end of the natural science of psychology as far as human beings are concerned. That is because we

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[25] *QDA*$_3$ II.9 (ed. Sobol 1984, 138): "Verum est quod certe magna est dubitatio si ponamus in homine solam animam. Oportet enim istam esse intellectivam et indivisibilem, non extensam aliquo modo extensione materiae vel subiecti. Et tunc ista anima inextensa est anima sensitiva et vegetativa. Quomodo igitur, cum sensatio ponitur extensa extensione organi et materiae, poterit ipsa esse in subiecto indivisibili inhaerente et tamquam educta de potentia istius? Hoc videtur mirabile, cum forma non habeat extensionem nisi extensionem sui subiecti. Et quomodo divisibile et extensum poterit inhaerere indivisibili et inextenso? Hoc videtur mirabile. Et certe ego respondeo quod hoc est mirabile, quia mirabili et supernaturali modo anima humana inhaeret corpori humano non extensa nec educta de potentia subiecti cui inhaeret, et tamen etiam toti corpori inhaereat et cuilibet parti eius. Hoc vere est mirabile et supernaturale."

[26] It is clear that 'mirabile' must mean more than simply 'amazing' or 'astonishing', since it is not our own affective or cognitive response that is at issue here – even if we do find the truth about how the human senses work amazing – for someone might be amazed at the action of a magnet or the sight of a waterspout, even though both have perfectly good natural explanations. Rather, Buridan is making the much stronger claim that the human soul's relation to its body is miraculous in the sense of being *supernatural*, and hence beyond our natural capacity to explain – even if we do not happen to find it particularly amazing. In his *Questions on Aristotle's Meteorology* I.8, he remarks: "there are several ways of understanding the word 'natural'. The first is when we oppose it to 'supernatural' (and the supernatural effect is what we call a miracle)… And it is clear that meteorological effects are natural effects, since they are produced naturally, and not at all miraculously… Consequently, philosophers explain them by the appropriate natural causes, but uneducated folk, ignorant of these causes, believe that these phenomena are produced by a miracle of God, which is usually not the case…" (my translation of Edmond Faral's French translation of this unedited text in E. Faral, *Jean Buridan: Maître ès Arts de l'Université de Paris*, Extrait de l'Histoire littéraire de la France, Vol. 28, pt. 2 (Paris: Imprimerie Nationale, 1950), 95). This appears to be the old Albertine distinction between the natural and the miraculous, which Buridan probably learned from reading John of Jandun. For discussion, see my 'Natural Philosophers on the Nature of the Intellect', in M. C. Pacheco and J. F. Meirinhos (eds.), *Intellect and Imagination in Medieval Philosophy*, Rencontres de philosophie médiévale, 11 (Turnhout: Brepols, 2006), vol. 3, 1797–1812. I am grateful to Sten Ebbesen for pressing this point in discussion.

[27] For discussion, see Zupko (2003), 175–182.

can still inquire meaningfully into the animate operations of nutrition and growth, sensation, and understanding. We can even assign these operations to the unique, empirically indiscernible subject we call the soul. But we must give up the pretense that psychology reveals anything about the essence or real nature of the soul.[28] Buridan agrees with Aristotle in reserving this task for the metaphysician, though again like Aristotle, he never raises the question in his *Metaphysics* commentary.

What this means for the psychologist is that despite the external, physiological similarities, horse sense has as much in common with human sense as a painted eye does with a real eye. The sensitive part of the human soul certainly uses a flesh-and-blood eye to see, but only insofar as it manifests the right combination of material dispositions to allow vision to take place. But the human soul is in no way extended in the eye, unlike the equine soul:

> … the same soul that is sensitive and intellective uses a corporeal organ in all of its acts of sensing, but not in its act of understanding. And it is denied that the sensitive soul is extended in a human being. Instead, it informs corporeal and extended matter, and possesses an act of sensing that coexists with the corporeal organ, as has been claimed elsewhere [i.e., in *QDA*$_3$ II.7]. It is also granted that the sensitive soul is generated in a human being, i.e., it is created by God, and that the bodily dispositions required for sensing are naturally generated and derived from a material potentiality. And it is denied that the sensitive soul of a human being is corrupted in death. Instead, the corporeal dispositions required for sensing naturally are corrupted.[29]

Now it might be objected here that even if we bite the bullet and say that the immaterial human soul must have an immaterial and unextended act of sensation, it would be absurd to claim, as a further consequence of the unity thesis, that the vegetative faculties of the human soul are only nominally the same as those in brute animals and plants. After all, growth and nutrition, unlike sensation, pertain only to the body and are able to function on their own without being willed or otherwise entering into our cognitive lives. How could the human body be inhabited by a vegetative ghost?

Here Buridan bites another bullet, again committing himself to the consequences of the unity thesis:

> … just as the intellective soul is generated differently in matter than other forms (because it is not derived from a material potentiality, but infused in a certain supernatural way), so consequently there is in a human being a different mode of nutrition than in other living things. There is, to be sure, similarity in one respect, and difference in another.

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[28] For discussion, see Zupko (2003), 207–214.

[29] *QDA*$_3$ III.17 (ed. Zupko 1989, 193, ll. 105–116): "Ad primam dicitur quod eadem anima quae est sensitiva et intellectiva in omni suo actu sentiendi utitur organo corporeo, sed non in actu suo intelligendi. Et negatur quod anima sensitiva in homine sit extensa. Sed bene, informat materiam corpoream et extensam, et habet actum sentiendi coexistentem organo corporeo, sicut alias dictum est. Conceditur etiam quod anima sensitiva in homine generatur, id est, creatur a deo, et dispositiones corporis requisitae ad sentiendum generantur naturaliter et educuntur de potentia materiae. Et negatur quod anima sensitiva hominis corrumpatur in morte. Sed bene, corrumpuntur corporales dispositiones requisitae ad naturaliter sentiendum."

> There is similarity because in both [humans and other living things] the substantial form of the food is corrupted, and in the matter of the food there begins to exist the substantial form, or part of the substantial form, of the living thing, which is said to be nourished. And so in both cases, something comes to be not absolutely, but in a certain respect, viz., in keeping with a three-piece predication, because the matter [of the food] has been informed by a form by which it was not previously informed, i.e., by the soul or by part of the soul [of the creature eating it]. But there is also a difference, since in brutes something belonging to the substantial form is generated in such a way that it did not exist before, but in human beings, nothing belonging to the substantial form, i.e., the soul, comes to be in the matter, i.e., begins to exist in matter in which it did not exist before. And this suffices for nutrition, because in this way the quantities of body are preserved: both the shapes of the limbs, and other dispositions suited to all of the operations of the soul.[30]

The exact meaning of this passage is obscure, but the upshot seems to be that the human soul is neither augmented nor diminished by what is taken into its body as food, although food does contribute to the nourishment and growth of that body.[31] It is not possible, of course, to contribute materially to what is "indifferently in each part of the body however that body is extended."[32] But non-human animal and plant souls are literally augmented in the process of nourishment because they are materially extended. If you are a horse, the way to become great-souled is to eat something. Like alfalfa. Lots of alfalfa.

Skilled logician that he is, Buridan also provides a way of analyzing propositions involving inherence claims, distinguishing two syncategorematic senses and one categorematic sense of the term 'whole [*totum*]', as well as a further sense that is partly categorematic and partly syncategorematic.[33] On the latter reading, we are to

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[30] *QDA*$_3$ III.17 (ed. Zupko 1989, 193, ll. 105–116): "Ad aliam quae arguit de nutritione, dicitur quod sicut anima intellectiva aliter generatur in materia quam aliae formae (quia non educitur de potentia materiae, sed quodam supernaturali modo infunditur), ita consequenter est in homine alius modus nutritionis quam in aliis viventibus. Est enim hic et illic convenientia et differentia. Convenientia enim est quia utrobique forma substantialis alimenti corrumpitur, et in materia alimenti incipit esse forma substantialis vel pars formae substantialis viventis, quae dicitur nutriri. Et sic utrobique fit aliquid non simpliciter sed loquendo secundum quid, scilicet cum praedicatione de tertio adiacente, quia materia sit formata forma qua non erat ante formata, scilicet anima vel parte animae. Sed bene est differentia, quia in brutis aliquid generaretur de forma substantiali sic quod illud ante non erat, sed in homine nihil de [de//sed] forma substantialis, scilicet anima, fit in materia; id est, incipit esse in materia in qua ante non erat. Et hoc sufficit ad nutritionem, quia sic salvantur quantitates corporis, et figurae membrorum et aliae dispositiones convenientes omnibus operationibus animae."

[31] Why, then, does Buridan say that in both human and non-human living things, "the substantial form of the food is corrupted, and in the matter of the food there begins to exist the substantial form, or part of the substantial form, of the living thing"? Perhaps the divine infusion of the soul into the body is an ongoing process, or the soul somehow becomes self-effusive whenever we eat or drink. But if so, there is an equivocation here on the sense of 'begins to exist [*incipit esse*]', since only in the non-human case is this a natural process.

[32] *QDA*$_3$ II.9 (ed. Sobol 1984, 139): "ipsa anima est indifferenter in qualibet parte corporis quantumcumque extensa."

[33] For discussion, see Zupko (2003), 156–61.

expound the proposition 'The whole A is B' as 'A is B, and nothing belongs to A that is not B'. So, if we consider the following three propositions:

P1 The whole divine essence is God
P2 The whole intellective soul informs the whole human body
P3 The whole soul of a horse is in each part of the body of a horse

P1 and P2 are true, because their subjects and predicates are related indivisibly or definitively. P3 is false, however, because a horse's soul is divisibly or circumscriptively present in its body, whole in whole and part in part, so that the soul-part in its foot is distinct from the soul-part in its eye. Buridan closes by reminding his students that if points in a line could be said to touch each other in the way suggested in Book VI of Aristotle's *Physics*, they would have to touch each other as wholes in the combined categorematic/syncategorematic sense of the term, since points are indivisible.[34]

3 Conclusion

In the context of later medieval natural philosophy, the question of whether horses and humans have the same sensory powers invokes the larger, theological question of how so-called 'brute' animals differ from us as created beings. Are horse souls and human souls the same kind of thing?

Three possible answers would have suggested themselves to an arts master such as Buridan: (1) there is no difference at all, a view he would have associated with the ancient materialists Democritus and Leucippus, whom he read about in Aristotle;[35] (2) humans have something over and above brute animals, i.e., a part of the soul which can understand and reason, which is implied by Aristotle's tripartition of the soul (and reflected in the etymology of the word 'brute [*brutus*]' as stupid, or lacking reason); or (3) humans and non-human animals differ 'all the way down', which is similar to the Stoic position adopted, with varying degrees of comprehension, by Augustine and later authors in the Augustinian tradition, e.g., in twelfth-century treatises on natural science. These authors emphasized the unitary conception of

[34] *QDA*$_3$ II.7 (ed. Sobol 1984, 104): "Alio modo utimur hoc nomine 'totum' partim categorice et partim syncategorice, ut quod exponamus totum A est B quia A est B et nihil est ipsius A quod non sit B. Unde sic bene dicitur 'totum' de indivisibilibus, ut tota essentia divina est Deus et tota anima intellectiva informat corpus humanum, immo et totum corpus humanum. Sed sic non est tota anima equi in qualibet parte corporis equi, sed in qualibet parte corporis equi est tota anima equi, sicut prius dicebatur. Et isto modo capit Aristotelis 'totum' in sexto Physicorum [VI.1.231a25–31], ubi dicit quod si essent puncta indivisibilia in linea et tangunt se, necesse est totum tangere totum."

[35] See Aristotle, *Physics* I.2. Buridan is clearly thinking of this text when he cites Democritus, Melissus, and Parmenides in connection with materialism about the soul in Book III, Question 11 of his commentary on *De anima* (*QDA*$_3$ III.11, ed. Zupko 1989, 122, ll. 203–204).

the soul associated in late antiquity with Chrysippus.[36] It is this conception, for example, that is behind Bernardus Silvestris' remark that although "the operative power of the pure soul is itself one and pure, it is not uniform in operation. For sight is transmitted through the eyes and hearing through the ears. Similarly it adapts itself to the structural differences of the other organs which it employs."[37] Furthermore, the Stoics argued that the impulse by which living things move themselves, which is also the mechanism of sensation, *differs in species* between rational and non-rational animals, even though "these species have not been given corresponding names."[38] We can see this, for example, in William of Conches' assertion that the *virtus* or power responsible for sensation in brute animals is "in no way" the same as in human beings because it is material.[39]

Of these possible answers, the first was not taken seriously by Buridan or by most other natural philosophers commenting on Aristotle. The second had the weight of Aristotle's authority, but Buridan abandoned it because he could not understand how the soul could be a unity on any strong or literal reading of its tripartition. He thereby avoids the problem of explaining soul/body interaction which has plagued Cartesian dualist theories of mind. The third answer also had the weight of authority behind it – though that weight was more theological than philosophical – yet it must explain why all of the evident similarities between animate processes in human beings and non-human animals are really just that, similarities, since their sensory powers are different kinds of thing. For theological purposes, the difference between human beings and brute animals is of course the difference that matters, since it is we who are made in God's image and to whom eternal life has been promised. Buridan's contribution was to show that the third answer was also a philosophical option, by engaging and defending it in the context of Aristotle's science of the soul.

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[36] See Galen, *On Hippocrates' and Plato's doctrines* 5.6.34–37, in A. A. Long and D. N. Sedley (ed. & ans.), *The Hellenistic Philosophers* 1 (Cambridge: Cambridge University Press, 1987), 65I. Interestingly enough, Buridan also insists that the seat of sensation is the heart and not the brain (as in Galen and Avicenna), a move that recalls the Stoic identification of the *hêgêmonikon* or ruling part of the soul with *pneuma*, the mixture of air and fire concentrated around the heart. See QDA_3 II.24 (ed. Sobol 1984, 402–409). For discussion of this passage, see P. G. Sobol, 'Sensations, Intentions, Memories, and Dreams', in J. M. M. H. Thijssen and J. Zupko (eds.), *The Metaphysics and Natural Philosophy of John Buridan*, Medieval and Early Modern Science, 2 (Leiden: Brill, 2001), 194–195.

[37] *Cosmographia* (Microcosmos) 13, trans. W. Wetherbee, *The 'Cosmographia' of Bernardus Silvestris, Records of Western Civilization Series* (New York: Columbia University Press, 1973), 122. Actually, Bernardus' idea turns out to be not too far off from recent genetic findings showing that when the mouse version of pax-6, the eye-making gene, is introduced into fruit flies, it makes an eye like that of a fruit fly, rather than a mouse. See J. G. Ackermann, *Chance in the House of Fate: A Natural History of Heredity* (New York: Houghton Mifflin, 2001).

[38] Stobaeus 2.86, 17–87, 6 (*SVF* 3.169, part), trans. Long and Sedley 1987, vol. 1, 53Q.

[39] William of Conches, *Dragmaticon Philosophiae* VI.16, trans. Ronca and Curr 1997, 151.

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Objects of Sense Perception in Late Medieval Erfurtian Nominalism

Pekka Kärkkäinen

1 Introduction

The present chapter examines the different views about the objects of sense perception held by late medieval nominalist philosophers at the University of Erfurt. The discussions on sense perception in medieval Aristotelianism were complicated by the notion of inner senses – through these the sensitive soul was said to perform various higher cognitive processes which the external senses were incapable of performing and which could not be attributed to the intellectual soul. Several problems were also associated with external senses, one of them being the question of the nature of their objects.

Available sources provide different positions on the question as to how the object of external sense perception should be understood. Two basic alternatives can be found: (i) the object of sense perception is the accidental form of a substance, like color or (ii) the object of sense perception is the accidental form, but in an undifferentiated manner, which does not distinguish it from the substance it inheres in. The first formulation seems to correspond in a rather immediate manner to Aristotle's view on color as the object of sight (see *De anima*, II.7, 418a–b). The second view can be seen as a refinement of the first position, but it also seems to be related to Aristotle's reference to "that in which color is" as "visible through itself". The formulation of different opinions took place in the discussion of the mode of sensitive cognition which was characterized as either "abstract" or "concrete".

This study will present an analysis of these views in two question commentaries on Aristotle's *De anima*. These commentaries were written by Johannes Carnificis de Lutrea and Bartholomaeus Arnoldi de Usingen. The commentary by Lutrea, *Exercitium librorum de anima Aristotelis,*[1] was printed posthumously in 1482. Usingen published his own *Exercitium de anima*[2] in 1507, and he obviously made use

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[1] Johannes Carnificis de Lutrea, *Exercitium librorum de anima* (Erfurt: Paulus Wider de Hornbach, 1482).

[2] Bartholomaeus Arnoldi de Usingen, *Exercitium de anima* (Erfurt: Wolffgang Schenck, 1507).

S. Knuuttila, P. Kärkkäinen (eds.), *Theories of Perception in Medieval and Early Modern Philosophy,*

of Lutrea's commentary, although he revised it considerably. The titles of these commentaries suggest that they were used in the disputational exercises (*exercitia*), which were part of the curriculum. After this analysis, some observations will be made on the use of the distinction between the abstract and concrete sensitive cognition which is found in the handbooks of natural philosophy by Usingen and his colleague in the artistic faculty, Jodocus Trutfetter.

2 Substance as Object of Sensation

In discussing the question of how accidents contribute to the cognition of what a thing is, Lutrea states that substance is not sensed, since it is not included in the object of sensation. Accordingly, the senses present only accidents and not substances to the intellect.[3] Substance is known by the intellect, which derives the cognition of substances by reasoning from the knowledge of accidents. This takes place by an inference from caused to its cause, where substance is the material cause in which the accidents inhere as their subject. This *a posteriori* cognition is the mode in which substance is always cognized.[4]

The notion that substance is not included in the object of sensation and therefore is not cognized by the sense seems to be rather important for Lutrea, since he mentions it in several questions dealing with the senses.[5] However, "sensation" does not here encompass all the funtions of the sensitive faculty. Concerning the question about the common sensibles, Lutrea states that sense, viz. the sensitive faculty, can in fact produce cognition of substances, but only through a certain inference from singular accidents to singular substances. By allowing this act, he seems to be able to explain why a lamb can recognize a wolf by its outer appearance. This inference is a function of an inner sense called *vis aestimativa* in animals, and its major difference from intellectual cognition is that it makes inferences from singulars to singulars. Furthermore, this mode of reasoning is called "a kind of *discursus*" (*per quendam discursum*), which reinforces the view that substance is known only by an inference from accidents to their (material) cause.[6]

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[3] "Antecedens [patet] quia intellectus intelligit accidentia et substantiam primo sicut sensus repraesentat ei. Sensus autem solum representat intellectui accidentia et non substantiam. Ergo intellectus primo intelligit accidentia et tunc per viam abstractionis devenit in cognitionem substantiae. Quod autem sensus solum repraesentat intellectui accidentia patet quia substantia non est sensibilis ergo etiam non possunt eam representare intellectui. Sed solum accidens est sensibile quia sensus sentit illud solum quod clauditur in obiecto eius. Sed substantia non clauditur in obiecto sensus ergo etiam non sentit substantiam." Lutrea, *Exercitium*, ff. 14^{v}–15^{r}.

[4] "Sequitur correllarie quod substantia solum a posteriori cognoscitur a nobis, quia cognitio substantiae per accidentia illa est a posteriori, quia cognitio causae per causatum est a posteriori. Modo accidens est causatum substantiae in genere causae materialis quia accidentia sunt in substantia tanquam in causa materiali subiectiva." Lutrea, *Exercitium*, f. 15^{r}.

[5] See Lutrea, *Exercitium*, ff. 15^{r}; 33^{v}; 34^{v};

[6] "Unde sensus solum per quaendam discursum qui a singulari ad singulare devenit ab accidentibus in cognitionem substantiarum. Sic ovis ex figura et dispositione lupi devenit in cognitionem lupi."

This activity of the sensitive faculty is strictly distinct from the activity of the external senses, insofar as Lutrea wants to hold onto the view that substance is not sensed. In discussing the inner senses, Lutrea gives further examples of this kind of reasoning, where animals can form a cognition of a non-sensible object. He also remarks that since this form of reasoning takes place from singulars to singulars, the sensitive capacity of reasoning is called "imperfect reasoning", whereas the intellectual reasoning is called *discursus perfectus.*[7]

Lutrea basically provides only one line of argument to offer proof for his position that only accidents are sensed by the external senses. It asks for the conditions which an object of sense should satisfy. The reasoning proceeds as follows: only that is sensed which is included in the object of sense. Substance is not included in the object of sense, since it can be changed without causing a change in the sensation. In favor of the last statement, Lutrea presents a theological example of the transsubstantiation in the Eucharist, where the substantial change into the body of Christ does not change the sensation of the bread and wine. In addition to this, he also presents an example from ordinary experience. He notes that sense makes the same judgement upon a cow whether it is living or dead, although in the latter case, it is no longer a cow in the proper sense. So the act of sensation does not change when the substance behind the accidents is changed. On the contrary, when an accident changes, the sensation of it is changes accordingly.[8]

Lutrea, *Exercitium*, f. 35^{r}; see also f. 49^{r}. The faculty of *vis estimativa* as well as the example of the lamb and wolf derive ultimately from Avicenna. See Avicenna, *Liber de anima,* I.5, ed. van Riet, pp. 86, 93–96; 89, 48–53; IV.1, pp. 7, 83–88.

[7] "Sed vis aestimativa dicitur vis elicitiva et cognitiva in hominibus et aestimativa in brutis. Et vis aestimativa est vis qua animalia ex cognitione sensatorum deveniunt in cognitionem non sensatorum. Et sic illa vis est quodam discursus potentiae sensitivae secundum quam potentia sensitiva discurrit ab uno ad aliud. Et sic ovis ex figura et dispositione lupi quem videt elicit inimicitiam lupi quam nunquam sentit. Sic etiam irundo secundum illam potentiam discurrit quod sit nidificandum in loco alto et non basso ubi est accessus hominum. Sic etiam aranea discurrit secundum illam potentiam quod sit ponendus rete in loco ubi sit multitudo muscarum. Et differentia est inter discursum sensus et intellectus quia intellectus discurrit a singulari ad singulare et etiam ad universale vel ab universali ad singulare. Sed sensus solum discurrit a singulari ad singulare. Et sic discursus ipsius sensus est quodam discursus imperfectus sed discursus intellectus est perfectus." Lutrea, *Exercitium*, f. 49^{r}. On the discursive function of the sensitive faculty, see K. H. Tachau, "What Senses and Intellect Do: Argument and Judgement in Late Medieval Theories of Knowledge", in K. Jacobi (ed.), *Argumentationstheorie. Scholastische Forschungen zu den logischen und semantischen Regeln korrekten Folgerns* (Leiden: Brill, 1993), 653–668.

[8] "Sed substantia non clauditur in obiecto sensus, ergo etiam non sentit substantiam. Minor probatur, quia illud non clauditur in obiecto, quo variato ipse sensus non variat suum iudicium. Sed stat substantiam variari absque hoc quod sensus variet suum iudicium. Sic in sacramento altaris facta consecratione substantia panis mutatur vi consecrationis in corpus Christi. Et sensus iudicat eodem modo de hostia post consecrationem sicut ante. Item de vacca alba viva et mortua iudicat eodem modo sensus, ergo solum cognoscit accidens." Lutrea, *Exercitium*, f. 15^{r}; "Probatur. Illud non claudatur in obiecto sensus, quo variato sensus non variet suum iudicium. Modo variata substantia alba sensus visus non variat suum iudicium, ergo. Minor [probatur], quia sensus visus iudicat eodem de vacca alba viva et mortua. Item sensus visus iudicat eodem modo de hostia in sacramento altaris facta transsubstantiatione sicut non facta transsubstantiatione. Accidente variato sensus variat suum iudicium, ergo accidens claudatur in obiecto sensus." Lutrea, *Exercitium*, f. 33^{v}.

3 Lutrea and Buridan's View on Sensation

The position Lutrea defends, seems to differ from John Buridan's view to a certain degree. This is noteworthy, since Buridan was the main authority on nominalist natural philosophy in Erfurt. The difference becomes explicit when Lutrea states that the proper object of sight is "color" and not "colored" i.e. a colored being. This is grounded by the view that only accidents are included in the object of sense and not the substance.[9] The same kind of argument can be formed in the discussion of the common sensibles, where Lutrea states that the common sensibles are to be referred to in abstract terms, as Aristotle seems to do, such as "magnitude" or "figure".[10]

Buridan occasionally speaks of the colored being (*coloratum*) as incidentally sensible (*sensibile per accidens*) and not as the proper object of sense in the corresponding question on the possibility of error in sensation.[11] However, this manner of speaking does not exactly correspond to his considered view on the object of sense. Discussing the question on common sensibles, he states that sense is incapable of sensing the qualities distinct from their subjects, and as such it cannot sense an abstracted particular whiteness (*albedo*). Instead what is sensed is something, which corresponds to the concrete form of the sensible quality, e.g. a white thing (*album*). This is also the reason why the common sense is capable of judging the white being it sees as also sweet.[12] Furthermore, the division between proper and incidental

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[9] "Pro quo notandum, quod illud est obiectum proprium potentiae circa quod ut sic illa potentia versatur et nulla alia, ut sic et color est proprium obiectum visus, quia circa colorem visus ut sic versatur et nulla potentia magis. Et coloratum non est proprium obiectum visus sed color, quia sensus visus fertur in colorem et non in coloratum, quia sensus ille non fertur in substantiam sed solum in accidens, quia solum accidens claudatur in obiecto sensus et non substantia." Lutrea, *Exercitium*, f. 33^{v}.

[10] "Notandum primo pro responsione, quod quinque sunt sensibilia communia secundum Philosophum in hoc secundo de anima, qui sensibilia communia debent nominari in abstracto, ut etiam Aristoteles nominat ea. Et sic magnitudo est sensibile commune et non magnum. Sic etiam figura et non figuratum, quia sensus sentit magnitudinem et figuram et non magnum et figuratum, quia sensus solum sentit accidens et non substantiam." Lutrea, *Exercitium*, f. 34^{v}.

[11] "Et ex istis dicam, quod per istam proprietatem sic expositam non differunt sensibilia propria a sensibilibus per accidens, quia de sensibili per accidens non videmur decipi quantum ad iudicium generale, sed quantum ad specialia, sicut dictum est de sensibilibus propriis. Non enim decip[i]mur videntes coloratum iudicando quod coloratum est aliquid vel alicubi. Sed in speciali decipimur iudicando quod est lignum vel lapis, quod est in illo loco vel in isto." John Buridan, *Questiones in tres libros De Anima Aristotelis*, *De tertia lectura*, II.11, in P. G. Sobol (ed.), *John Buridan on the Soul and Sensation. An Edition of Book II of His Commentary on Aristotle's Book on the Soul with an Introduction and a Translation of Question 18 on Sensible Species* (Ph. D. diss., Indiana University, 1984), 167–168.

[12] "Et notandum est, sicut mihi videtur, quod cum qualitas et subiectum eius, ut albedo et substantia sibi subiecta, sint simul confuse secundum situm, sensus non habet potestatem distinguendi inter eas, nec percipit ipsam albedinem distincte a perceptione istius subiecte, nec illam substantiam distincte a perceptione istius albedinis. Et ideo non percipit albedinem secundum istum conceptum secundum quem dicitur albedo. Unde et sic sensus communis dicitur ponere convenientiam et differentiam inter sensibilia propria diversorum sensuum, scilicet iudicans album quod videt esse

sensibles does not imply a difference in the thing sensed, but rather a difference in the concepts designating what is sensed. White is sensed *per se* under a concept of a white thing (*album*), but substance is sensed *per accidens*, yet not as a substance (i.e. stone *as* stone), but rather as an undifferentiated subject of whiteness.[13]

Buridan's most elaborate account on how the sensible cognition contributes to the whole process of cognition can be found in a question of the first book of questions on Aristotle's *De anima,* where Buridan asks whether accidents contribute to the knowledge of substances. According to the edited text of the questions, Buridan states that the sense perceives the substance and accident in a confused manner, whereas the intellect makes a differentiation between these two. He even maintains that the cognition of a common subject for various accidents, which takes place in the sensitive faculty, makes it possible for the intellect to abstract the notion of substance.[14]

Buridan offers several reasons for his view on sensory cognition. For instance, a dog does not necessarily follow the one it sees, but the one who is calling it, distinguishing between the one she sees and the one who is calling. It would be

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dulce vel non dulce." Buridan, *Questiones in tres libros De Anima Aristotelis*, *De tertia lectura*, II.12, ed. Sobol, p. 181.

[13] "Dico igitur quod cum dicimus aliud sensibile per se, aliud per accidens, non intendimus divisionem seu alietatem rerum que sentiuntur, sed intendimus divisionem seu alietatem nominum vel conceptuum quibus res que sentiuntur nominantur vel concipiuntur. Eadem enim res que sentitur dicitur sensibilis per se secundum illud quod impositum est a conceptu secundum quem ipsa sentitur, et dicitur sensibile per accidens secundum illud nomen quod impositum est ei secundum conceptum secundum quem non sentitur, ita quod nomini sumpto a conceptu secundum quem sentitur attribuitur hec predicatio 'sensibile per se' ad designandum quod, secundum istum conceptum, sentitur. Et nomini sumpto a conceptu secundum quem non sentitur attribuitur illud predicatum 'sensibile per accidens' ad designandum quod sentitur, sed non secundum ipsum conceptum. Verbi gratia, cum lapis sit albus dicitur quod album sentitur per se, et album sentitur secundum conceptum secundum quem dicitur album, et lapis sentitur per accidens, sed non secundum conceptum secundum quem dicitur lapis." Buridan, *Questiones in tres libros De Anima Aristotelis*, *De tertia lectura*, II.12, ed. Sobol, pp. 184–185. See also John Buridan, *Questiones in tres libros De Anima Aristotelis*, *De tertia lectura*, III.8,. ed. in J. A. Zupko (ed.), *John Buridan's Philosophy of Mind: An Edition and Translation of Book III of His "Questions of Aristotle's De Anima" (Third Redaction), with Commentary and Critical and Interpretative Essays* (Ph. D. diss., Cornell University, 1989), pp. 76, 308–317. For the interpretation of the passage, see Zupko (1989), 534–535; for further references, see P. O. King, "Jean Buridan (b. ca. 1295/1300; d. after 1358)", in J. J. E. Gracia (ed.), *Individuation in Scholasticism* (Albany: State University of New York, 1994), 425, footnote 30.

[14] "Secundus modus est quod sensus primo percipit simul confuse substantiam et accidens, sed postea intellectus, qui est virtus superior, ponit differentiam inter substantiam et accidens. Unde, si video aliquem nunc esse album et postea eundem video esse nigrum, et cum hoc percipio quod ipse manet idem, ego venio in cognitionem qua cognosco hoc esse aliud ab albedine et similiter aliud a nigredine. Et sic, quamvis primo apprehendatur mediante sensu substantia et accidens confuse, tamen tali cognitione sensitiva praecedente, intellectus, qui est virtus superior, potest venire in cognitionem determinatam ipsius substantiae." John Buridan, *Questiones in tres libros De Anima Aristotelis*, *De prima lectura*, I.5, ed. B. Patar (Louvain-la-Neuve: Éditions de l'Institut Supérieur de Philosophie, 1991), p. 207. See also G. Klima, "John Buridan on the Acquisition of Simple Substantial Concepts" in R. L. Friedman, S. Ebbesen (eds.), *John Buridan and Beyond: Topics in the Language Sciences 1300–1700* (Copenhagen: The Royal Danish Academy of Sciences and Letters, 2004), 17–32.

absurd to say that a dog makes a distinction between the color and the voice; it rather distinguishes between two subjects of such qualities. Furthermore, it seems difficult for the sensitive faculty to cognize a separate quality, since the process of differentiating between accidents and substances is difficult even for the intellect. Aristotle's use of abstract terms in the description of the objects of sense is explained by a reference to the conventional nature of words, which allows the use of abstract names instead of their concrete counterparts.[15]

So it is clear that for Buridan, the object of sight is a colored object and not the color as in Lutrea. Usingen describes this disagreement in his commentary without mentioning Lutrea by name. Usingen calls Buridan's view "concrete cognition of the sense" and the view represented by Lutrea as "singular abstract cognition." Buridan's view is summarized as follows: "Sense cognizes substance and accident simultaneously as one object in a singular manner."[16]

It seems that precisely this formulation of Buridan's view, where substance is said to be sensed together with the accident, seemed suspect for Lutrea. Lutrea states that there is a view which maintains that sense has cognition of an accident together with substances, and in a certain sense, this can be called a concrete sensation. However, what he prefers to call concrete is the sensation when the sense cognizes the accident before the abstraction of some circumstantial properties.[17] Usingen clearly favors the view put forth by Buridan, when he notes that this view seems to be that of Aristotle and Averroës, the Commentator.[18]

Despite their different opinions both Lutrea and Usingen want to refer to the operation of the sense as concrete cognition, whereas abstract cognition (understood as a cognition of universals) is solely left to the intellect. This kind of differentiation, where concrete and abstract cognition is divided according to the sensitive and intellective faculties, can be found already in the *Summa theologiae* by Thomas

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[15] Buridan, *Questiones in tres libros De Anima Aristotelis*, *De tertia lectura*, II.12, ed. Sobol, pp. 182–183.

[16] "An autem sensus cognoscat abstractive vel concretive sunt duo modi loquendi, quorum primus est quod abstractive, non universaliter sicut intellectus abstractive cognoscit per conceptum specificum vel generificum sed singulariter ad illum sensum quod cognoscat accidens sub hic et nunc, ut hunc colorem, hanc albedinem, istum sonum et ceteriis, et hoc primarie et immediate, quia secundario ex accidente devenit in cognitionem substantiae et subiecti, ut canis ex voce et figura cognoscit dominum suum et ovis ex dispositione lupi cognoscat lupum. Et fundamentum illius est, quia obiectum sensus est accidens, ut patet per Philosophum, qui obiecta, id est sensibilia tam propria quam communia, ponit in abstracto, ut sunt color, sonus, magnitudo, figura et cetera, etiam ad variationem accidentis sensus mutat suum iuditium, igitur accidens est obiectum eius. Secundus est Buridani, quod concretive, ad illum sensum quod cognoscat simul substantiam cum accidente per modum unius obiecti singulariter, ut hoc coloratum, hoc album et ceteriis." Usingen, *Exercitium*, f. G5^{r}.

[17] "Sed praeposita non sequitur quod sensus cognoscat abstractive, quia abstractive cognoscere hoc solum convenit intellectui. Sed sensus cognoscat concretive. Non autem concretive quod cognoscat substantiam cum accidente, sed sic concretive quia cognoscit accidens sub hic et nunc ut singulariter vage." Lutrea, *Exercitium*, f. 33^{v}; cf. also *Exercitium*, ff. 15^{r}; 34^{v}–35^{r}.

[18] "Et iste secundus modus videtur esse de mente Aristotelis et sui Commentatoris ut claret per dicta eorundem." Usingen, *Exercitium*, f. G5^{r}.

Aquinas. Aquinas articulates the distinction by the difference between singular and universal terms, where "abstract" refers to the abstraction of the universal species out of the materially conditioned sensitive species. Usingen adopts the terminology used by Aquinas but, like Buridan, implies a correlation between this distinction and the division of terms into those which are concrete and abstract. Lutrea denies this correlation, but instead defines the object of sense explicitly by abstract terms.[19]

4 Usingen on Concrete Cognition

In defending his view of what he calls "concrete cognition of the sense", Usingen presents the arguments mainly found in Buridan's question on the common sensibles. The first of these is that since abstract cognition is difficult even for the intellect, it is even more so for the sense, which is an inferior potency by nature. Here Usingen can appeal to the authority of Averroës, who states that the sense is not able to grasp the quiddities of the things, which would mean an abstract cognition of a simple essence, like that of sole accidents.[20]

After that, Usingen appeals to the examples of a dog who does not approach the voice but the caller or who does not follow the odor of the flesh but the odorous flesh itself.[21] Usingen also answers, as does Buridan, the objection that Aristotle names the objects of sense by their abstract names, by saying that the Philosopher uses here the abstract names for the concrete ones. Usingen has even an explanation for this, when he says that in this manner, the philosophers indicate that it is the accidents which cause the sensation and not the substances. Aristotle himself uses a concrete term for the primary object of sense: in defining a sensible *per accidens,* he states that "something is said to be sensible *per accidens*, when the son of Kleon is white, for the son of Kleon is sensed not because he is son, but because he is white" (cf. Aristotle, *De anima*, III.1, 425a25–27).[22] Later on, Usingen accordingly notes on the object of sight that color is the object of sight, yet without excluding its

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[19] Thomas Aquinas, *Summa theologiae* I.86.1, ad 4: "Unde id quod cognoscit sensus materialiter et concrete, quod est cognoscere singulare directe, hoc cognoscit intellectus immaterialiter et abstracte, quod est cognoscere universale." Cf. also I.86.1, co.

[20] "Et fundamentum illius est, quia altior potentia scilicet intellectus difficulter intelligit abstractive accidens sub hic et nunc, ergo hoc vero convenit potentiae inferiori Cum accidens separare a substantia et utrunque seorsum cognoscere pro propria ratione solius est intellectus. . . Commentator secundo huius: sensus non sentit nec cognoscit quidditates rerum, id est abstractive, unam essentiam simplicem solum, quia hoc difficile est intellectui, igitur." Usingen, *Exercitium*, f. G5^{r}.

[21] "In cuius signum canis clamatus non vocem sed vocantem accedit nec odorem carnis sed carnem odoram sequitur et amplectitur." Usingen, *Exercitium*, f. G5^{r}.

[22] "Quia dicit Philosophus secundo huius: per accidens autem sensibile dicitur ut albus sit Cleonis filius. Sentitur enim filius Cleonis, non quia est filius, sed quia est albus. Et quod Aristoteles ponit sensibilia in abstracto, non obstat, quia crebro indiscriminatim concretum pro abstracto et ediverso ponit. Non tantum sine causa utitur abstractis, quia illa significant formaliter accidentia, quae sunt causae sensationis, quapropter etiam nominantur abstractive a philosophantibus." Usingen, *Exercitium*, f. G5^{r}.

subject where it inheres. Therefore "color" is to be properly understood as meaning "colored", "according to the more probable way of speaking."[23]

On the question of whether substance is sensed *per se* or *per accidens,* Usingen makes a distinction. With respect to the *vis elicitiva* or *cogitativa,* substance is said to be sensible *per se*, because it is precisely the object of the operation of this virtue. As for the external senses or the common sense, this is not the case, and that is the reason why the substance is said to be only sensible *per accidens*. What in this case is meant is that substance *as* substance (*absolute considerata*) corresponds to a substantial concept such as human being. As such, substance is not sensed by an external sense through itself, viz. a human being is not seen *as* a human being, but substance is sensed through *vis elicitiva* or *cogitativa* on the basis of a previous sensation of an object, which is this substance. Usingen does not mention the *vis aestimativa* in his discussion. Perhaps such cognition is not possible for the subspecies of *vis elicitiva* of an animal soul, which is the *vis aestimativa*, but only to that of the human soul, namely the *cogitativa.*[24]

Usingen holds the view that in all the cases, the object of the external sense is an accident insofar as it is in its subject, corresponding to the concrete term for a quality like, for example, "this white thing" (*hoc album*). Yet external sense does not sense the subject of the quality as substance, but it senses substance and quality as one, undifferentiated object. At least for humans, it applies that the cognition of a singular substance as substance does, however, take place already in the sensitive potency, that is, in the internal senses.

Usingen does not specify the manner as to how internal senses produce the cognition of a singular substance. He clearly avoids using terms such as *discursus* which Lutrea uses. Usingen apparently does not want to argue for the possibility of animal reasoning in the cognition of singular substances. This is also suggested by his notion that according to certain opinions, the human faculty of *vis cogitativa* is distinguished from the corresponding faculty in animals and called *ratio particularis* due to its connection to the intellect.[25]

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[23] "Respondetur colorem esse obiectum visus sine exclusione subiecti cui inest color. Ponitur enim abstractum loco concreti apud Philosophum quia color loco colorati iuxta probabiliorem modum loquendi." Usingen, *Exercitium*, f. H^{v}.

[24] "Quod autem sensus ex accidente cognoscit substantiam particularem, hoc fit per virtutem elicitivam seu cogitativam respectu cuius talis substantia dicitur sensibile per se; elicit enim ex sensatis non sensata. Sed respectu sensuum exteriorum et sensus communis, in quantum complet sensationem exteriorem, dicitur substantia absolute considerata sensibile per accidens. In hoc enim quod quis videt album per se, et album tale est homo, dicitur etiam videre hominem, sed per accidens, ut clare ostendit Philosophus in textu." Usingen, *Exercitium*, f. G5^{r}. On the division of the *vis elicitiva,* see Usingen, *Exercitium*, f. K4^{v}.

[25] "Dicunt tamen quidam illam virtutem in homine vocari cogitativam et habere altiorem operationem quam in bruto propter coniunctionem intellectus, quia elicit non sensata, cognoscit substantias particulares et componit speciem cum specie. Ex redundantia rationis vocaturque ratio particularis et sic comprehendit in se formativam. Dicuntque ultimum actum non convenire bruto, quare ponunt tantum quattuor sensus exteriores." Usingen, *Exercitium*, f. K4^{v}.

5 Disagreement Between Lutrea and Usingen

We are now able to specify the way in which Usingen differs from his Erfurtian predecessor concerning the question of the object of sense perception. This difference of opinion lies mainly in two areas: (i) the general understanding of things perceived by the senses, expressed in the different readings of concrete cognition as the mode of cognition which is specific to sense perception and (ii) the understanding of the knowability of the substance through the senses.

On the first topic, Usingen seems to think like his great authority, Gabriel Biel, who came to judge the view of Ockham critically in his *Sentences* commentary. Biel notes that "the Doctor holds that sense cognizes only in an abstract and not in a concrete manner... in respect of this, it is often necessary to modify his sayings."[26] Usingen likewise wanted to label the view presented by Lutrea as "abstract cognition", no matter what Lutrea said of his own position, which Usingen must have known.

While the similarity between Usingen and Biel is certainly not accidental, Usingen adopted the same way of presenting his view even before he was familiar with Biel's writings on this matter.[27] Biel's note would certainly have encouraged Usingen to formulate his position in the way he did. Whether Lutrea's position on this matter was grounded in Ockham's views directly or indirectly, is difficult to demonstrate. Equally difficult is to show that Ockham would have agreed with Biel's description of his view.

Nevertheless, there is at least one passage where Ockham explicitly takes a position on the notions of concrete and abstract cognition and perception. This passage belongs to his argumentation against Aquinas' doctrine that the universal is the first object of the intellect. Ockham interprets Aquinas' text on concrete and abstract cognition as being counter-evidence for a view that the first object of intellect is what sense perceives, namely a singular as singular. The text by Aquinas would suggest that what is cognized by sense as singular is cognized by the intellect as universal.[28]

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[26] F. J. Burkard, *Philosophische Lehrgehalte in Gabriel Biels Sentenzenkommentar unter besonderer Berücksichtigung seiner Erkenntnislehre* (Meisenheim am Glan: Anton Hain, 1974), 62.

[27] Like in an earlier treatise *Parvulus philosophie naturalis* (Leipzig: Wolffgang Stöckel, 1499), which shall be treated below.

[28] "Tertio dico quod notitia singularis sensibilis est simpliciter prima pro statu isto, ita quod illud idem singulare quod primo sentitur a sensu idem et sub eadem ratione primo intelligitur intuitive ab intellectu, quia de ratione potentiarum ordinatarum est quod quidquid – et sub eadem ratione – potest potentia inferior potest et superior... Dicitur quod virtus superior potest in illud in quod potest virtus inferior, sed eminentiori modo, quia illud quod cognoscit sensus materialiter et concrete – quod est cognoscere singulare directe – hoc cognoscit intellectus immaterialiter et in abstracto, quod est cognoscere universale." Ockham, *Scriptum in librum primum Sententiarum. Ordinatio*, I.3.6, ed. S. Brown and G. Gál. Opera theologica 2 (St. Bonaventure: Franciscan Institute, 1970), 494, 19–495, 9.

Ockham attempts to disapprove the whole division. Most of his argumentation is based on the correlation of abstract and concrete cognition to abstract and concrete terms. He concludes that this is an absurd mode of speech regarding the senses, since "concrete" and "abstract" are properties of the signs, whether written or spoken, or of concepts, which belong to the realm of intellect and not to the senses.[29]

Another author from the same period, Walter Burley, seems to be more explicit in rejecting the idea of concrete cognition in the form presented by Buridan. Unlike Ockham, Burley does not question the division between abstract and concrete in this context, but states explicitly that accidents are sensed *per se* only as abstract objects, whereas as concrete objects they are sensed *per accidens*. Burley's view is thus rather similar to the one represented by Lutrea. Even Burley's argument for his position may be seen as being echoed in Lutrea's arguments. Burley states that it is evident that the accidents are not sensed as concrete features in themselves, but only incidentally through the abstract features in the object, since hypothetically (a) if an accident such as light would exist without a subject, it would still be perceived and, vice versa (b) if a subject of an accident, like the substance of the sun, the moon or a particular fire, would exist without accidents, it would not be perceived.[30]

As it seems, the criticism by Ockham plays no immediate role in the disagreement between Lutrea and Usingen. Likewise, neither does Lutrea explicitly question the distinction between abstract and concrete cognition, nor does Usingen try to address this kind of criticism. Usingen seems therefore quite capable of responding to objections raised against Buridan's opinion by Lutrea. Since Buridan does not argue that substance is sensed *per se* as substance, but only as an undifferentiated subject of accidents, his view avoids the problems caused by the change of sub-

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[29] "Praeterea, sensus non cognoscit tantum album quod est concretum, sed albedinem, quia secundum Philosophum, II De anima, color est per se visibilis; igitur si cognoscere aliquid in abstracto est cognoscere universale, sensus cognosceret universale. Praeterea, cognoscere hanc albedinem quae significatur nomine abstracto non est plus cognoscere universale quam cognoscere hoc album quod significatur nomine concreto. Et ideo ille est absurdus et fatuus modus loquendi, dicere quod cognoscere aliquid concrete est cognoscere singulare, et cognoscere aliquid in abstracto est cognoscere universale, quia concretum et abstractum sunt condiciones et proprietates vocum vel signorum, vel forte conceptuum, quorum cognitio non pertinet ad multos sensus particulares, nisi valde per accidens, et non ad omnes, et tamen omnes habent cognoscere singularia. Et ideo iste est non intelligibilis modus loquendi 'cognoscere aliquid ut significatur nomine concreto et cognoscere idem ut significatur nomine abstracto', nisi intelligendo quod contingit aliquid significari utroque nomine, et hoc praecise pertinet ad intellectum." Ockham, *Ordinatio,* I.3.6, OTh II, 495, 16–496, 7.

[30] "Ex hiis manifestum est quod omnia sensuuntur per se sunt abstracta, ut lux, color, sonus, odor, calor, frigus, et sic de aliis. Concreta autem non sensuuntur per se sed tantum ad sensationem suorum abstractorum que important, ut lucidum quod est congregatum ex duobus: videlicet, ex subiecto et accidente, non sentitur per se seu per subiectum sed tantum per lucem, quia, posito per ymaginationem quod lux existeret per se sine subiecto, videretur, sicut nunc sed subiectum lucis, ut sol vel luna vel ignis, per se sine luce vel calore nullo modo videretur, non per se quia per se subiectum non est activum in visum, nec per accidens quia non habet aliquod accidens visibile in se, et ita de omni qualitate sensibili et de omni substantia." Walter Burley, *De sensibus*, Ms. Cod. Vat. lat. 2146, ff. 246^{vb}–247ra (ed. H. Shapiro and F. Scott in *Walter Burley's De sensibus*. Mitteilungen des Grabmann-Instituts der Universität München 13 (München, 1966); cited from the internet-reproduction by T. Gloning in http://staff-www.uni-marburg.de/~gloning/wburl-ds.htm).

stances in the case of bodily death. Thus the example of a dead human being or the dead cow does not contradict the object of sense being concrete, with the meaning corresponding to the concrete term, since it only proves that substance *as* substance is sensed *per accidens*, but accident is still cognized according to a concrete term. This is proved by the observation that even if the change in the substance from living to dead animal does not imply a change in the sensation, the concrete accidental term "white" is changed according to the change in the sensation. Therefore, the objects of sensation are sensed *per se* in concrete terms.[31]

One might think that an analogous response would apply to the problem of transubstantiation in the Eucharist, but curiously enough, Usingen seems to ignore this argument posed by Lutrea on several occasions. It may be that precisely this objection is somewhat problematic for Usingen, since it is not self-evident whether the accidents of the eucharistic elements have any subject at all. Similar problems would arise from the hypothetical case presented by Burley, where it is assumed that there would be, *per imaginationem*, no subject for accidents.

Usingen does not indicate which view of the existence of accidents (including the continuous quantity and the qualities) in the Eucharist would be correct: whether it is the (i) view, according to which all qualities of the bread in the Eucharist exist supernaturally *per se* without any subject being extended by themselves without needing to posit any distinct entity such as quantity or (ii) the view, which states that qualities of the eucharistic elements inhere in their respective quantities. This would imply that the continuous quantity is a third entity in addition to substance and the qualities, which can act as the subject of qualities in the case eucharistic miracle. Either of these views could be supported by authorities of the *via moderna* who were unanimous on the question of whether continuous quantity is an entity really distinct from substance and quality. However, according to both views, it would have been problematic to respond that the transubstantiation does not alter the subject of the accidents.[32]

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[31] "Sensibile per se est res secundum aliquam habitudinem considerata, qua variata ceteris remanentibus necesse est aliquem sensum variare suum iudicium, ut homo inquantum albus vel niger est sensibile per se visus… per accidens est res secundum aliquam habitudinem considerata, qua variata ceteris remanentibus non oportet sensum variare suum iudicium iudicando post aliter quam ante, ut album inquantum homo vel inquantum vacca, quia remanentibus accidentibus et variata substantia per ablationem formae substantialis in morte sensus iudicat post sicut ante, et si cognoscitur ibi non esse homo nec vacca, hoc est per intellectum et non sensum." Usingen, *Exercitium*, f. G5^{r-v}.

[32] The uncertainty of the correct position lead Usingen to offer a double answer to the question of whether the continuous quantity is really distinct from a singular substance and its qualities in his *Exercitium phisicorum* (Erfurt: Wolffgang Schenck, 1507), ff. C5^{v}–D4^{r}. There Usingen considers both opinions as being probable answers to the question and presents both of them in the form of conclusions and their objections, which was quite exceptional in his *exercitia.* In 1499 Usingen had published an appendix to his *Parvulus philosophie naturalis*, which contains a question on the same matter presented in a Erfurtian quodlibet disputation in the year 1497 (see Usingen, *Parvulus*, ff. 125^{r}–139^{v}). There he vehemently defended Ockham's position and refuted the proofs for the other opinions.

On the second difference regarding the question of whether substance is perceived by the sense, Usingen is ready to accept that substance is somehow sensed, a position Lutrea categorically denies. This is due to Usingen's more refined understanding of the cognition of substance, which implies two levels of cognizing. External sense cognizes substance as a mere undifferentiated subject of accidents, but the intellect or an inner sense (apparently the human *vis cogitativa*) is needed to cognize substance according to a substantial concept. However, the view held by Usingen does not explicitly meet the more profound criticism by Ockham of whether the semantic distinction between abstract and concrete terms should be applied to the operations of the sensitive faculty, since it is not conceptual. Perhaps a response to this could be that the Buridanian view adopted by Usingen does not necessarily argue for any activity of conceptual formation in the sensitive faculty. Rather, with the notion of the concrete term this position tries to formulate that the sense cognizes its object in an undifferentiated manner regarding the distinction between substance and its accidents. This serves as a way to explain why the perceptive faculty, most notably the common sense, is able to carry out certain operations which somehow necessarily seem to presuppose a notion of a common subject for the accidents. On the other hand, Usingen seems to think that the inner sense forms even singular substantial concepts, but this belongs to a higher level of cognitive process than the simple sense perception and possibly presupposes the presence of the intellectual soul. Yet this criticism would be more applicable to Lutrea, who explicitly affirms the idea of some kind of animal reasoning, which results in a cognition of singular substances.

Despite the differences in the wording, we must not overestimate the disagreement between Lutrea's position and Usingen's Buridanian solution. Both agree on the notion that the cognition of the external sense is a simple cognition, which is caused by the accident, and that the substance *as* substance is not the object of the sense. Furthermore, they likewise agree on the notion that the *vis elicitiva* or, at least the human *vis cogitativa,* forms the cognition of a particular substance out of the judgement of the external senses. For this reason, Usingen is inclined to say that the sense, but only this particular inner sense, can form cognition of a substance *per se*, whereas Lutrea speaks only of the capacity of the external senses.

6 Abstract and Concrete Sensation in Erfurt Compendia

The distinction between abstract and concrete sensation became a customary topic in the handbooks of natural philosophy, which were published in a printed form in the early 16th-century Erfurt. In contrast to the *exercitia*, which were composed of a number of uniform questions, these publications were more or less concise expositions of the various areas of natural philosophy, including at least the material corresponding to Aristotle's *Physics* and *De anima* which was analysed in bachelor courses.

The earliest publication of this type discussing this distinction was Usingen's *Parvulus philosophie naturalis*, published in 1499. Usingen wrote this book several

years before his *Exercitium de anima* and so it illuminates the development of the discussion between the two Erfurt question commentaries discussed above. After examining the sense of sight, he adds a *dubium*, "whether sense like sight or another senses concretely of abstractly, that is, a colored or a color." This is formally presented in the form of a question, but as in many other cases, Usingen does not offer a resolution which he would defend himself, but simply presents two differing opinions on the matter. The first is the view of Buridan, which is stated in much the same way as later in the *Exercitium*. The difficulty of the cognition of separate accidents is referred to as a basis for this approach, and the Aristotelian use of abstract terms in discussing the objects of sense is explained by the conventions of speech.[33]

The second opinion, which Usingen describes, does not correspond to Lutrea's view, as one would expect. Usingen characterizes this position by saying that according to it, sense cognizes abstractly. However, this abstract cognition is not the cognition of accidents only, but a process of cognition, where the first stage is the "primary and immediate intuition", where sense is drawn to accident; after that follows another cognition on the subject of accident. Since these cognitions are made instantly, with no apparent succession in time, sense makes a judgement concerning them as if they were one "confused" cognition, since "it cannot separate a part of a whole, whereas this belongs only to the intellect." Therefore, according to this opinion, there is a twofold description of the objects of sense. The "immediate objects" of the sense are described by abstract terms such as color, but the "confused apprehended objects" are described in the concrete terms such as colored. In favor of this opinion Usingen notes that according to some authors, sense can perceive accidents without subjects, such as voices and odors, whereby substance can be said to be sensible *per accidens*, since it is cognized only indirectly.[34]

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[33] "Sed hic incidit dubium an sensus, ut visus vel alius, sentiat concretive vel abstractive, id est, coloratum vel colorem. De quo sunt duae opiniones. Opinio prima est Buridani, quod sensus cognoscat concretive ut coloratum et non seorsum colorem et sic de aliis. Cuius ratio est quia intellectus difficulter intelligit abstractive, ut solam partem alicuius compositi sicut est materia vel forma substantialis vel accidentalis, ergo hoc non convenit inferiori potentiae, qualis est sensus, quare communiter dicitur totum compositum esse sensibile, partem vero per abstractionem intellectus esse cognoscibilem, quia postquam totum cognitum est per sensum vel intellectum, intellectus potest abstrahere conceptum cuiuslibet partis seorsum. Et quin obicitur Aristotelem in exemplificando sensibilia posuisse in abstracto, dicit eum usum esse abstracto pro concreto, sicut in simili cum dicitur paupertas regnat, iniustitia dominatur, id est pauperes regnant et iniusti dominantur." Usingen, *Parvulus*,ff. 98^{r-v}.

[34] "Opinio secunda est multorum aliorum quod sensus cognoscat abstractive, sub illo intellectu, quod primario et immediato intuitu feratur in accidens, quo cognito immediate post feratur in subiectum accidentis, et ille duae cognitiones fiunt tam subito, quod non apparet nobis successio, sed in confuso iudicamus de ambobus quasi indistincte, quia sensus in cognoscendo non potest separare partem a toto cum hoc soli intellectui conveniat, ut patet per rationem primae opinionis. Quare secundum illam opinionem immediata obiecta sensuum debent poni in abstracto, ut color, odor, sapor, caliditas et sic de aliis. Sed obiecta in confuso apprehensa ad sensum dictum debent poni in concreto, ut sunt coloratum, sapidum, calidum et sic de aliis. Quibusdam tamen videtur sensum bene posse percipere accidens sine subiecto, probant de sono, odore et aliis, et ideo vocant

From these remarks one gets the impression that the view presented by Usingen as the second opinion, is a kind of modification of the view found in Lutrea's *Exercitium* which takes Buridan's view more seriously instead of simply rejecting it. On the one hand, Buridan's phenomenological description of the act of sensation is accepted, so that the complete process of sensation is said to appear as to confuse cognition of both the accident and its subject, corresponding to a concrete accidental term. On the other hand, there is a metaphysical division of the sensation of accident and of its subjects, where the former is said to be immediate in nature. Hence the idea of separate accidents as primary and *per se* objects of sensation is retained in a way similar to Lutrea's view. For some unknown reason, by the time Usingen published his *Exercitium,* he had abandoned the second opinion and replaced it with the view found in Lutrea's *Exercitium*.

The same also applies to his handbook entitled *Compendium naturalis philosophie*, which dates from about 1507. The way in which different opinions are described here is a shortened form of the corresponding passage in *Exercitium de anima*.[35] A bit lengthier summary of the matter is given by Usingen's elder colleague, Jodocus Trutfetter, in his *Summa in totam physicen* published in 1514. The question of whether sense cognizes concretely or abstractly is discussed at the end of the section on external senses, after the short notice on sensibles *per accidens.* This work by Trutfetter presents two different views on the matter which appear in almost the identical wording as is used in Usingen's *Exercitium*.[36]

7 Conclusion

The Buridanian view of the concrete cognition as the general characteristics of sense perception remained the last word of the fading scholastic natural philosophy in Erfurt. It is noteworthy that this theory was not accepted merely on the basis of authority, but it was defended against the competing view, which appeared as legitimate inside the same school of thought. The Buridanian version of concrete cognition even gained a position of a textbook definition in the works of Usingen and Trutfetter on the eve of the Renaissance and the Reformation – the movements, which eventually discontinued the German tradition of Buridanian philosophy.

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substantiam sensibile per accidens, quia accidente cognito illo mediante cognitur substantia et cetera." Usingen, *Parvulus,* f. 98^{v}.

[35] Usingen, *Compendium Naturalis philosophie Opera et studio singulari M. Bartholomei de vsingen In Gymnasio Erphurdiensi Collectam ad laudem dei et rei publice litterarie profectum Cuius lectione attenta naturalis scientie candidati facile prima physice capient elementa* (Erfurt: Wolffgang Schenck, ca. 1507), ff. L2^{v}–L3^{r}.

[36] Jodocus Trutfetter, *Summa in totam physicen, hoc est philosophiam naturalem siquidem vere sophie, que est Theologia per D. Judocum Isennachensis in gymnasio Erphordensis elucrabata et edita* (Erfurt: Matthias Maler,1514), f. Cc2^{r-v}.

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Renaissance Views of Active Perception

Leen Spruit

Debates on visual perception in cognitive science reveal the surprising persistence of a traditional philosophical problem, that is, whether perception is to be seen as being based on a largely passive reception of information provided by the sense organs or as an active selection and elaboration of external stimuli. Since the rise of cognitive science in the 1960s, this issue is often phrased in terms of the dilemma between a "bottom-up" and a "top-down" approach in the explanation of perception. Bottom-up theories stress the neurophysiological aspects of perception, while top-down views argue for the cognitive control of information processing. Until the late 1980s, cognitive scientists mostly viewed perception as informationally encapsulated, that is cognitively impenetrable, and thus relatively independent of subsequent information processing in the brain or the mind.[1] It is now, however, fairly generally accepted that stored knowledge and assumptions actively affect even the simplest perception. Consequently, the question of the importance of passive bottom-up processes to active top-down processes has become controversial. Indeed, perceptual activity theory (as developed especially in active vision robotics), instead of viewing perception as a matter of the inflow of information into the brain, regards perception as a continual process of active interrogation of the environment.[2] With due caveats, the mirror-lamp metaphor developed by Abrams to distinguish the eighteenth-century philosophical attitude to perception from that of the Romantics seems appropriate here: the bottom-up information processing approach to perception is a *mirror* theory, whereas perceptual activity theory, where experience rather arises from the activity of a mind reaching out into the world, falls under the *lamp* metaphor.[3]

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[1] See, for example, J. A. Fodor, *The Modularity of Mind* (Cambridge, MA: MIT Press, 1983), and idem, *A Theory of Content and Other Essays* (Cambridge, MA: MIT Press, 1990), Ch. 8.

[2] See, for example, N. J. T. Thomas, "Are Theories of Imagery Theories of Imagination? An Active Perception Approach to Conscious Mental Content", in *Cognitive Science* 23 (1999), 207–245. Cf. S. Hurley, "Perception and Action: Alternative Views", in *Synthese* 29 (2001), 3–40.

[3] M. H. Abrams, *The Mirror and the Lamp: Romantic Theory and the Critical Tradition* (Oxford: Oxford University Press 1953).

S. Knuuttila, P. Kärkkäinen (eds.), *Theories of Perception in Medieval and Early Modern Philosophy,*

From a historical point of view, the bottom-up model which stresses the passivity of sense can be associated with Aristotelian and both ancient as well as early modern atomistic theories of perception, while the top-down model, which assigns a primary role to human soul in the generation of perception, can be traced not only in Platonic philosophy, but also in the views developed by exponents of a non-atomistic materialism, from ancient Stoics to Telesio. At a first glance, the conceptions of perception as developed by Renaissance philosophers seem to confirm this traditional dichotomy. Yet, in the Renaissance commentaries on *De anima*, there are debates which invalidate, at least partially, the traditional lines of demarcation between active and passive views on perception. First, inspired by an enigmatic remark in Averroes' great commentary on Aristotle's *De anima*, medieval Peripatetics, most noticeably the fourteenth-century French philosopher Jean Jandun, argued for the existence of an active perceptual faculty, the so-called *sensus agens*. Although this view, which became highly controversial during the Middle Ages,[4] was generally rejected by Renaissance authors, it stimulated the latter to reflect on the active aspects of perception. Second, the ancient Neoplatonist Simplicius emphasized in his *De anima* commentary[5] that the passivity involved in the act of perception was restricted to the sense organs, seen as mere transducers of signals from the external world, and did not pertain to the human soul which actively elaborated the impact of external reality impinging on the sense organs. This interpretation influenced not only authors who used Simplicius' *De anima* commentary before it was even available in print, such as Agostino Nifo, but also those who dissented from Neoplatonic interpretations of Peripatetic psychology, such as Jacopo Zabarella.

The issue about the passiveness or activeness of perception is associated with important philosophical questions, such as what is "objective" and what is "subjective" in perception, and the notoriously intricated issue of primary and secondary qualities. In this paper, I intend to address the question from a more general perspective, analyzing the factors which led Renaissance authors to attribute active features to perception. Section 1 shows that attributing an active dimension to perception was generally seen as unproblematic by authors outside the Peripatetic

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[4] See A. Pattin, *Pour l'histoire du sens agent. La controverse entre Barthélemy de Bruges et Jean de Jandun, ses antécédents et son évolution: étude et textes inédits* (Louvain: Leuven University Press, 1988).

[5] The authenticity of Simplicius' *De anima* commentary was challenged by Francesco Piccolomini, and recently by two scholars, F. Bossier and C. Steel, "Priscianus Lydus en de *In de anima* van Pseudo(?)-Simplicius", in *Tijdschrift voor Filosofie* 34 (1972), 761–821. For the sake of convenience, I shall continue to refer to this *De anima* commentary as being the work of Simplicius. For a survey of the discussion since the Bossier-Steel paper, see E. P. Mahoney, "The Greek Commentators Themistius and Simplicius and their Influence on Renaissance Aristotelianism", in *Neoplatonism and Christian Thought*, ed. D. J. O'Meara (Albany: Norfolk, 1982), 170–177 and 261–282, on p. 269, note 7, and H. J. Blumenthal, "The Psychology of (?) Simplicius' Commentary on the *De anima*", in H. J. Blumenthal and A. C. Lloyd (eds.), *Soul and the Structure of Being in Late Neoplatonism*, (Liverpool: Liverpool University Press, 1982), 73–93, on pp. 73–74. For the Iamblichean conception of *skopos*, see p. 77 of the latter article, and by the same author, "Neoplatonic Elements in the *De anima* Commentaries", in *Phronesis* 21 (1976), 64–87, on p. 76f.

camp. By contrast, the issue of active perception was rather controversial among Aristotelians. In Section 2 we shall see that Aristotelian perception theory was not monolithic. Although it is characterized by certain core commitments, such as the fundamental receptivity of sense which suggest particular lines of interpretation and explanatory strategies, different theoretical elaborations were constructed around this core to account for theoretical issues raised and for some cases of empirical evidence.

1 Active Perception in Cusanus, Ficino and Telesio

According to Nicolaus Cusanus (1401–1464), the human mind is primarily a *vis*, that is, a force or an energy-centre, capable of producing perception and various types of knowledge through the unfolding of its own powers. The human mind is also described as a *viva substantia*, or as a divine seed that generates the world (*rerum universitatem*) at the cognitive level, that is, *notionaliter*.[6]

The Platonic doctrine of innate notions was unacceptable for Cusanus, as it would make the embodiment of the human mind unintelligible. Consequently, Cusanus believed that the excitation of the senses was more than merely an occasional stimulus, that is, he insisted on sensation being an essential condition for the generation of knowledge about the sensible reality. Therefore, he believed that Aristotle was right in rejecting the Platonic *notiones concreatas*.[7] At the same time, however, Cusanus rejected the image of the human mind as an absolute blank passively receiving sensible stimuli and information. Just like a deaf man will never be able to play the guitar, so the mind is unable to acquire knowledge without the capacity of judgement.[8] If this *iudicium* is what Plato meant by his inborn notions, then Plato was right.[9] But how does the mind gain knowledge of the external world, if it does not have innate notions of the world, nor can be passively informed by the senses? In other words, how does the "empty" judging mind make contact with sensible reality so as to "assimilate" it?

Cusanus assigned perception and knowledge of the sensible realm to a single cognitive power, which he called "mind". He explicitly rejected traditional faculty psychology, which envisaged various faculties for ontologically distinct objects.

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[6] See, in particular, *Idiota de mente*, ed. L. Baur, in *Opera omnia*, Vol. V (Leipzig: Felix Meiner Verlag, 1937), c. 5, pp. 62–63; cf. also *De venatione sapientiae*, ed. P. Wilpert (Hamburg: Felix Meiner Verlag, 1964), c. 29.

[7] *Idiota de mente*, c. 4, pp. 60–61; cf. c. 13, p. 107.

[8] A similar position had already been defended by Bonaventura during the 13th century. See his *Itinerarium*, in *Opera theologica selecta*, ed. A. Sépinski, tomus V (Florence, Quaracchi: Collegii S. Bonaventura, 1964), cap. II, n°5, p. 301: "*Diiudicatio* igitur est actio, quae speciem sensibilem, sensibiliter per sensus acceptam, introire facit depurando et abstrahendo in potentiam intellectivam. Et sic totus iste mundus introire habet in animam humanam per portas sensuum (. . .)." This view was to recur in Zabarella and Piccolomini; see below.

[9] *Idiota de mente*, c. 4, p. 61.

The human mind is basically a *vis concipiendi*, displaying a range of differentiated activities such as intellect, reason, imagination and sense.[10] The perceptual faculties, for example, are just modes of mental activity: they are moments of the unfolding inner powers of a unique *vis*, in circular movement of *descensus* and *ascensus*.[11]

In *Compendium* and *Idiota de mente*, Cusanus argued for the necessity of species in sense perception and intellectual knowledge concerning natural reality. Surprisingly, Cusanus endorsed the Peripatetic conception of the mechanics of perception as stated by the doctrine of the *multiplicatio specierum.*[12] Natural things do not directly penetrate into our sensitive soul; they transmit species which are multiplicated through the medium, received by the sense organs, and preserved by the phantasy. The species are identified as natural signs or informing forms.[13] On the basis of sensible species, human beings may develop other (intellectual and artificial) species with the aid of their intellectual powers, according to their scientific, technical, and ethical needs.[14]

Knowledge of the sensible world is realized when the descending mind meets the sensible species in the *spiritus*, a subtle fluid which makes up the network of veins, arteries and inner conducts of the sensible organs.[15] Cusanus believed that the spirit cannot be altered by the species, unless the spirit is animated by the mind. When animated by the descending mind, the spirit is capable of creating the similitudes of the mechanically introduced species:

> In illis omnibus locis vehitur in spiritu arteriarum mens nostra, quae excitata per obstaculum specierum ab obiectis ad spiritum multiplicatarum se assimilat rebus per species, ut per assimilationem iudicium faciat de obiecto. Unde spiritus ille subtilis arteriarum, qui est mente animatus, per mentem ad similitudinem speciei, quae obstaculum praestitit motui, spiritus sic conformatur, sicut cera flexibilis per hominem mentis usum ac artem habentem configuratur rei praesentialiter artifici praesentatae.[16]

Sense perception depends on the incoming species and on the intentionality of the soul.[17] Perception occurs when the mind has created the conditions for its generation, that is, when the mind has animated the sense organs, descending into the spirit which pervades these organs. It is only by virtue of the species encountered by the

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[10] *Idiota de mente*, c. 11, p. 100; see also *De coniecturis*, ed. J. Koch and W. Happ (Hamburg: Felix Meiner Verlag, 1971), II, c. 2, p. 91.

[11] *De coniecturis*, II, c. 4, p. 106, and c. 13. See also *Compendium*, ed. B. Decker and C. Bormann (Hamburg: Felix Meiner Verlag, 1982[2]), c. 13: the sensitive soul is *imago* or *similitudo intelligentiae.*

[12] Cf. *De mente*, c. 4, p. 60, on the *species multiplicatae* of vision.

[13] *Compendium*, c. 5, pp. 14–18.

[14] *Compendium*, c. 6, pp. 20–24.

[15] For the role of the *spiritus*, see *De mente*, c. 8; see also *De coniecturis*, II, c. 10. The doctrinal background of this notion of spirit probably lay in views derived from Hellenistic and medieval medicine, as well as in Augustine and in then newly discovered Neoplatonic writings.

[16] *De mente*, c. 7, p. 75.

[17] See also *Compendium*, c. 13, pp. 50 and 52: "(. . .) patet quod visio ex intentione coloris et attentione videntis oritur." This view is characteristically Augustinian.

mind in the spirit, however, that the mind's assimilation with the external world can take place. In this very assimilation, which is regarded as a necessary condition for the mental *iudicium*, bodily reality plays a crucial role. Indeed, it is the animated spirit that assimilates itself to the things, when it meets an "obstacle" which is created by the species. Thus, although strictly bound to the material *substratum*, the species essentially contribute to the production of perceptual acts.

The species impinge upon the sense organs and actualize the latter. Insofar as perception depends on species, it is passive.[18] Eventually, however, it is the human mind that effectively generates the *notiones sensibiles.*[19] The essential link between the incorporated mind and the body is expressed by the fact that the mind needs sensible images or species in order to be excited.[20] Where knowledge of unsensible things is concerned, auto-excitation is sufficient.[21]

The mind's descent is a necessary condition for its ascent: in view of its ontological bounds,[22] the human mind must descend into the body in order to be able to ascend.[23] It is in this context of the dynamics of mind that Cusanus' endorsement of the sensible species as the starting-point of knowledge should be understood.[24] Knowledge thus gained always remains inaccurate, because it is grounded in the similitudes of things that are unattainable *in se.*[25] Nonetheless, the common origin of mind and sensible things in God grounds the mind's relation to the sensible world.[26]

Based on the animated spirit's assimilating itself to the incoming species, human knowledge of sensible reality is effectively produced by the mind itself. In sensation the mind is not touched by sensible images. On the contrary, it is the mind itself that

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[18] See *Compendium*, c. 13, p. 50: "Sentire quoddam pati est. Agit igitur species in corpus organicum iam dictum." The first part of this passage is a quotation from Aristotle's *De anima*, 416b33–35.

[19] *De mente*, c. 7, p. 76: "Unde cum mens has faciat assimilationes, ut notiones habeat sensibilium, et sic est immersa spiritui corporali, tunc agit ut anima animans corpus, per quam animationem constituitur animal."

[20] *De mente*, c. 4, pp. 60–61: "(. . .) sic vis mentis, quae est vis comprehensiva rerum et notionalis, non potest in suas operationes, nisi excitetur a sensibilibus, et non potest excitari, nisi mediantibus phantasmatibus sensibilibus." Cf. c. 7, p. 77.

[21] *De mente*, c. 4, p. 61, and c. 7, p. 77.

[22] I do not discuss here Cusanus' reflections on the bounds of human knowledge, as formulated, for example, in *De docta ignorantia* and *De mente*, c. 7. According to Cusanus, knowledge of sensible reality is imprecise by definition. For a discussion of these themes, see Th. van Velthoven, *Gottesschau und menschliche Kreativität. Studien zur Erkenntnislehre des Nikolaus von Kues* (Leiden: Brill, 1977).

[23] *De coniecturis*, II, c. 16; cf. N. Henke, *Der Abbildbegriff in der Erkenntnislehre des Nikolaus von Kues* (Münster: Aschendorff, 1969), 57.

[24] In my opinion, Cusanus derived this doctrine of perception, based on the mechanics of multiplicated species, largely from medieval sources.

[25] See, in particular, *Compendium*, c. 1, p. 2; see also c. 13, p. 52, for perception as an inferential process based on intermediate species. For discussion, see C. L. Miller, "Perception, Conjecture, and Dialectic in Nicholas of Cusa", in *American Catholic Philosophical Quarterly* 64 (1990), 35–54.

[26] This theme was analyzed by Cusanus in *De docta ignorantia*.

encounters matter.[27] In this respect, perception is active assimilation rather than passive reception.[28]

Notwithstanding his rejection of all innate mental content, Cusanus was also convinced that the human mind contains the similitude of the order of things, and that it needs only to be excited in order to actually produce its notions.[29] When the mind descends into the spirit to encounter the production of the sensible organs, the human soul absorbs the objective, intelligible aspects of sensible reality. This assimilation should not to be understood in terms of passive impression or information, because the mind as a cognitive "engine" (in)forms itself, and may be compared to a wax tablet moulding itself.[30] According to Cusanus, the mind was of an essentially dynamic nature, able to descend into the very physiological structure of the sense organs in order to contact and assimilate the external world, yet without diminishing in the least the mind's spiritual nature. This dynamic presence of the mind is doubtless the most appealing aspect of Cusanus' alternative to the psychologies of Plato and Aristotle.

The commentaries and original treatises of Marsilio Ficino (1433–1499) exemplify the intensive assimilation and elaboration of Peripatetic elements in a strictly Platonic framework. The key to understanding Ficino's view on perception is the central position of the human soul in the hierarchical structure of reality. The soul's affinity to all other degrees of being grounds its virtually infinite capacity for knowledge.[31] The intellect displays its cognitive activity by virtue of an innate spiritual force, and is connected to reality by *species* and *rationes*, also called *formulae*, representing the more narrowly defined perceptual and cognitive objects.[32] Ficino rejected the idea that these *species* and *rationes* are received from the sensible world. According to him, the human soul is largely self-sufficient in its knowledge of the sensible world. The soul does not need the body to receive any impressed forms from it.[33] Indeed, the potentiality of the soul is such that it does not *receive* any forms

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[27] *De mente*, c. 7, p. 73.

[28] See *De mente*, c. 8, p. 81: the intellection of the sensible world as "motus mentis" is to be understood as "passio" only at its earliest stages.

[29] *De mente*, c. 7, p. 77; *De coniecturis*, II, c. 14; *De beryllo*, ed. K. Bormann (Hamburg: Felix Meiner Verlag, 1977[2]), 6.7.

[30] *De mente*, c. 7, pp. 77–78: "Et in hac assimilatione se habet mens, ac si flexibilitas absoluta a cera, luto, metallo et omnibus flexibilibus foret viva vita mentali, ut ipsa per seipsam se omnibus figuris, ut in se et non in materia subsistunt, assimilare possit. Talis enim vi suae flexibilitatis vivae, hoc est in se, notiones omnium, quoniam omnibus se conformare posset, esse conspiceret." This metaphor was already present in the work of Peter Olivi; cf. *Quaestiones in secundum librum Sententiarum*, ed. B. Jansen, vol. 3 (Florence, Quaracchi: Collegium S. Bonaventurae, 1926), vol. II, 416. Also Roger Marston used this metaphor; see *Quaestiones disputatae de anima*, in *Quaestiones disputatae de emanatione aeterna, de statu naturae lapsae et de anima* (Florence, Quaracchi: Collegium S. Bonaventurae, 1932), q. IX, p. 394.

[31] *Theologia platonica*, *Opera omnia*, 2 Vols. (Basel: Henricpetri, 1576 (repr.: Turin: Bottega d'Erasmo, 1983)), III.2, p. 121; II.9, p. 103.

[32] *Theologia platonica*, III.2.

[33] See *Theologia platonica*, IX.5, where Ficino argued against the Peripatetics that the soul operates without the body; see also XV.3, and *In Enneades*, IV.6.1, in *Opera*, 1752: "Non imprimuntur sensibilium formae in anima."

(for it possesses them already), but rather "quod exercet nunc quam non exercebat ante."[34]

This relationship of mind to the perceptual faculties and to sensible reality is marked by a fundamental ambivalence in Ficino. Generally speaking, Ficino believed that the senses and the phantasy only *deceive* the intellect.[35] However negative this view may be, it also implied the possibility of a sort of "contact" between the sensible and intellectual faculties. Ficino accepted the Peripatetic doctrine that the human soul knows bodily reality by means of images engendered by the senses. At the same time he pressed the need for a metaphysical foundation of the essential immaterialism of sensory images in order to account for the (possibly positive) contribution of sensibility to the generation of human knowledge. Indeed, he believed that these images, when they reach the rational centre of the soul, must already have a non-material mode of being because of the essential indivisibility of the senses themselves.[36] Elsewhere, Ficino used the metaphor of the mind as *speculum* to illustrate the immaterial reception of sensory images. Forms are received by the mind as in a mirror, that is, without intrinsic alteration. Now, the images in a mirror are in a sense incorporeal, that is, they are not produced by the bodies reflected, but by the light that surrounds them – a light that ultimately derives from the soul of the sun. In this sense the sensible images or species have a spiritual origin.[37]

Bernardino Telesio (1509–1588) attributed traditional psychological functions to a material spirit, an imperceptibly thin and fiery body,[38] which was located in the nervous system. According to Telesio, all mental activity ultimately depends on external stimuli, which affect the spirit and bring about sensation. Once modified, the spirit stores the sensation causing affections in the form of physiological traces, which are the basis for memory and thought. The spirit is a relatively closed system which on the impinging of "rough" stimuli develops modular activities, including emotion, perception and thought. The latter are natural acts, to be attributed to hot matter and grounded in the spirit's primitive capacity to react to external stimuli according to its own nature. They arise from the "sensibility" of the spirit. This sensibility concerns all types of internal and external stimuli. Furthermore, his explanation of how the spirit "feels" is based on two central

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[34] *Expositio in interpretationem Prisciani Lydi super Theophrastum*, in *Opera*, p. 1829; see also *In Enneades*, V.3.4, p. 1759.

[35] See *Theologia platonica*, IX.2–3.

[36] *Theologia platonica*, VII.1–4.

[37] *Theologia platonica*, VIII.13. As a matter of fact, Ficino did not accept the multiplication doctrine, not even for the sensible realm, in contrast with Cusanus.

[38] See *De rerum natura iuxta propria principia*, ed. L. De Franco, Vol. 3 (Cosenza: Casa del Libro, 1965–1974; Florence: La Nuova Italia, 1976), book VII.4, p. 12f. See also V.3, p. 216: the spirit as bearer of sensibility and movement; V.10, 260: spirit as *anima sentiens*; V.5, p. 226: the spirit is present principally in the nervous system, and in particular in the brain in order to guarantee the unity of perception (V.12, 274–276). The spirit (which Telesio also described as the seed-soul) is distinguished from the immaterial, rational soul, which is a divine creature added to spirit as its form. This divine soul is unable to ratiocinate without the sensible soul and its contribution to the knowledge of natural reality, though valuable, is essentially inferior to that of sense perception.

claims: (1) the spirit feels because it is moved by the affections of the body;[39] (2) nonetheless, in perception and other mental acts the spirit is *active*.[40]

The sense organs are the entrances ("viae") of the substance that really perceives, feels and thinks.[41] The spirit, although present in the whole body, has its principal seat in the brain.[42] The "central portion" of the spirit coordinates the parts of the spirit in the peripheral areas of the body, which communicate directly with the surrounding world. The existence of a central portion of spirit forms the basis for the perception of differences and for the existence of memory and intellection.[43] The spirit present in the peripheral regions depends on the commands of the central part and participates in its capacities.[44] The peripheral spirit is responsible for capturing the external stimuli. The central part, reposing well protected inside the brain, is not moved by external affections; unlike the peripheral spirit it is neither vexed by its *own* passions nor occupied by its *own* operations.[45] It is therefore able to grasp the operations and passions of the peripheral parts, elaborating, organizing and preserving the information received from the peripheral regions. The lower-level neuroanatomy monitors the external stimuli that impinge on the sense organs. The "central" spirit grasps these affections and stores them, thus laying the basis for imagination, memory and intellection.[46] That the soul is a centralized system, causally responsible for how the human being acts and functions, is a typically Stoic view.[47]

At first sight, Telesio's account of sensation may seem purely circular. Indeed, his explanation of the relation between external stimuli and intervening mental responses and states has a distinctly psychologistic flavour. Perception involves objects that move the spirit; yet it is not itself the passion caused by these objects in the sense organs and in the spirit. Rather, sense perception is "perceptio passionum, immutationum, motionum."[48] Summarizing, it would seem that perception consists

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[39] *De rerum natura*, VII.2, p. 4: "Utique manifestum est propterea rerum vires actionesque et aëri impulsiones spiritum sentire, quod ipse ab iis patiatur immuteturque et commoveatur spiritus."
[40] *De rerum natura*, VII.2, p. 4 and VII.6, p. 28.
[41] *De rerum natura*, V.35, p. 414.
[42] See *De rerum natura*, V.11, p. 270; cf. c. 27, p. 364.
[43] *De rerum natura*, V.12, pp. 274–278. See also V.27, pp. 360–364: animals are governed like cities. Cf. V.34, p. 406: animals are like ships, with different parts, a number of sailors, a captain, etc.
[44] *De rerum natura*, V.14, pp. 292–302; cf. V.12, p. 274.
[45] Cf. also *De rerum natura*, V.12, pp. 278–280.
[46] Cf. *De rerum natura*, VIII.28, pp. 294–296; see also below.
[47] The Stoics claimed that bodily affections occur in the affected regions, but sensations in the commanding faculty. This is the soul's highest part, which produces impressions, assents, perceptions and impulses. See Aetius, *De placitis philosophorum*, 4.21.1–4, and 4.23.1; Calcidius, *Commentarius*, in *Timaeus a Calcidio translatus commentarioque instructus*, ed. J. H. Waszink (London, Leiden: Warburg Institute, Brill, 1975), cap. 220; Plotinus, *Enneads*, IV.7.7. However, the Stoics located this commanding-faculty in the region of the heart.
[48] *De rerum natura*, VII.2, p. 6. Spinoza developed a similar causal account of knowledge: empirical knowledge is principally mediated, in the sense that the mind perceives external things only insofar as they affect our body. All perceptual knowledge is based on the ideas which the mind

in a perception: "ubi spiritus patitur, pati se sentit."[49] Two caveats are in order here. In the first place, notice that *how* sensation works is experientially inaccessible to us. Brain and nervous system are defined as the "medium in quo sentitur." We know that the soul feels in the brain, but the brain does not give to the soul a direct sensation of its own passions, which means that the processes that determine thought and perception are not accessible to introspection.[50] In the second place, in his account of sensation Telesio makes a crucial distinction between an alteration of the spirit, which is an affection caused by an external cause, and motion, which depends on the spirit's own substance and which is functional in preserving the spirit's own nature.[51]

Sensation presupposes that the spirit is set in motion by an object.[52] Aristotle was right when he observed that in sensation the human soul somehow becomes the things.[53] Yet, this does not mean that sense perception consists in a merely passive reception of forms: the soul is a material entity, so Telesio argued, and therefore it cannot be purely potential.[54] The soul is in act, but as such it is neither informed about its own nature nor about that of things in the environment. It is only through the stimuli caused by external things that the soul is pushed to its proper operation.[55] Thus, perception consists in an interaction between spirit and external stimuli: it is the result of the impacts of external objects which touch the spirit in the extreme parts of the body, traditionally identified as sense organs. Considering that perceptions presuppose a real tactile *passio*, all senses (with the exception of hearing) may be reduced to touch, which therefore has primacy over the other senses.[56]

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forms of these affections. Cf. *Ethica*, in *Opera*, ed. C. Gebhardt, Vol. 4 (Heidelberg: Carl Winter, 1972^2), l. II, props. 22 and 26: "Mens humana nullum corpus externum, ut actu existens, percipit, nisi per ideam affectionum sui corporis."

[49] *De rerum natura*, VII.20, p. 34.

[50] See *De rerum natura*, V.10, p. 266: "(. . .) sed cerebrum ipsum (. . .) nullum propriae passionis sentienti animae sensum praebet." John Locke was later to endorse a similar position. According to Locke, we are not aware of the sensory impulses that hit us, but only of what is generated within our minds. There is certainly a transition from nerve impulse to mental content, but Locke had very little to say about the mechanism that accomplishes this, since that mechanism as such is experientially inaccessible to us. See *An Essay Concerning Human Understanding*, ed. P. H. Nidditch (Oxford: Clarendon Press, 1975), II.xxiii.28; IV.iii.12–14 and 28; cf. *Remarks upon some of Mr. Norris's books, Wherein he asserts P. Malebranche's Opinion of our seeing all Things in God*, in *Works* (London: Tegg et al., 1823), X, p. 248. An explanation of Locke's "ignorance" (cf. *Essay*, IV.iii.12–14) about the generation of ideas is given by J. W. Yolton, "Mirrors and Veils, Thoughts and Things: The Epistemological Problematic", in A. R. Malachomski (ed.), *Reading Rorty. Critical Responses to Philosophy and the Mirror of Nature* (Oxford: Oxford University Press, 1990), 58–73, on p. 68: Locke was not an inspectionist, but a natural philosopher. For Locke and Malebranche, see the articles by Schumacher and Pécharman in this volume.

[51] *De rerum natura*, V.17, pp. 310–312.

[52] *De rerum natura*, VII.2, p. 4; cf. VIII.21, p. 266.

[53] *De rerum natura*, VII. 7, p. 24.

[54] *De rerum natura,* VIII.21, pp. 268–72.

[55] *De rerum natura*, VII.7, pp. 24–28.

[56] *De rerum natura*, VII.8, p. 30. See, in general, VII.8–33. For discussion, see F. Fiorentino, *Bernardino Telesio, ossia Studi storici su l'idea della natura nel Risorgimento Italiano*, Vol. I

The soul is not actualized by external forms.[57] Sensation is essentially an *operation* of the spirit.[58] At this point it is impossible to distinguish the process from the product. Perception is neither direct pick-up nor gradual assumption of forms, but rather a sensory-motor enactment.[59]

Sensation consists in the reaction of the spirit to its alterations.[60] Since the spirit is hot and mobile matter, this reaction is a motion.[61] The spirit's reaction to external stimuli is like a primitive awareness of its affections. The central part of the spirit stores the motions that caused its alterations. Things which are stored are not perceptions themselves or images, as Aristotle erroneously held;[62] they are various types of physiological traces (including warmth and coldness).[63] This coded information, incorporated in the physiological structure of the spirit, forms the basis for all other types of cognition. All the other derivative cognitive functions, including imagination, memory and discursive reasoning or intellectual thought, derive from a *motus recolens.*[64] They depend on sensation, which they are essentially inferior to.[65] Intellection, for example, consists of the recollection of past motions or passions in

(Florence: Le Monnier, 1872), 290–291. In *De sensu rerum et magia* and in his *Physiologia*, Campanella resumes Telesio's doctrine of the spirit, endowing matter as such with sense. It is probable that Hobbes referred to Telesio and Campanella in *English Works*, Vol. I, 393: "I know there have been philosophers, and those learned men, who have maintained that all bodies are endued with sense." See K. Schuhmann, "Telesio and Hobbes", in *Hobbes Studies* 1 (1988), 109–133, on p. 130, who, in note 41, refers to A. Levi, *La filosofia di Tommaso Hobbes* (Milan, Genua, Rome, Naples: Societa editrice Dante Alighieri, 1929), 55.

[57] *De rerum natura*, VIII.15, pp. 268–270; cf. VII.6–7, pp. 22–26.

[58] *De rerum natura*, VII.7, p. 28.

[59] For a similar approach in contemporary psychology, see F. J. Varela, E. Thompson, E. Rosch, *The Embodied Mind. Cognitive Science and Human Experience* (Cambridge, MA: MIT Press, 1993[3] (first edition: 1991)), in particular Ch. 7.

[60] Also Hobbes later regarded sensation as a countermovement. The object causes a motion in the sense organs that elicits a reaction in the brain, namely a representation. The phantasm or mental picture is an effect in the nervous system, which reacts to the motions caused by external objects. See *De corpore*, in *Opera philosophica quae latine scripsit omnia*, ed. W. Molesworth, Vol. 5 (London: Apud Joannem Bohn, 1839–1845), Vol. I, pp. 317 and 319: "sensio est ab organi sensorii conatu ad extra, qui generatur a conatu ab objecto versus interna, eoque aliquandiu manente per reactionem factum phantasma." For discussion, see J. Leshen, "Reason and Perception in Hobbes: An Inconsistency", *Nous* 19 (1985), 429–437, on p. 430.

[61] *De rerum natura*, VII.4, pp. 14–16.

[62] *De rerum natura*, VIII.29, p. 298. As a matter of fact, Aristotle's position was slightly different. According to Aristotle, sense perception occurs when sense organs are affected by external stimuli; it consists essentially in the production of sensory representations called *phantasmata*. The latter are not identifiable with iconic (or pictorial) images, however, because they comprise elements of all five senses. For Aristotle's view, see Knuuttila's contribution to this volume.

[63] For a critique against Aristotle's conception of phantasy; cf. *De rerum natura*, V.39, p. 444.

[64] *De rerum natura*, V.31, pp. 386–388.

[65] *De rerum natura*, VIII.2–3, pp. 164–172; VIII.9, p. 200f. The context of this valuation is the refutation of the Peripatetic doctrine of the hierarchy of cognitive faculties, from pp. 190ff. This refutation is built on the methodological rule, expressed in III, 240: "Non modus, sed res". For discussion, see L. Spruit, "Elementi aristotelici e polemica anti-peripatetica nella dottrina dell'anima divina di Telesio", *Verifiche* 21 (1992), 351–370.

and by the spirit (*recolitio passionum motuumque*).[66] Telesio therefore assimilated it to imagination and described it as *commemoratio* or *existimatio.*[67]

2 Agent Sense and Perceptual Judgement

The analysis of Peripatetic views of active perception developed during the Renaissance concentrates on the interpretation of the *De anima* texts in which Aristotle defined *aisthesis* (sensation or perception) as consisting in some sort of alteration or else in being moved.[68] Subsequently, Aristotle specified the alteration involved in sensation as a non-corruptive alteration, or as the Latin commentators observed: an *alteratio perfectiva.*[69] Yet, the soul's being moved by sensible objects[70] suggests that perception is a merely passive undergoing of external stimuli impinging on the sense organs.[71] During the Renaissance, an alternative view emphasizing active features of perception was developed, usually inspired by the authoritative interpretations of Aristotle's *De anima* by Simplicius and Averroes.

In his paraphrase of *De anima,* Themistius argued that in perception the senses, inasmuch ar they are not inanimate entities, stricty speaking do not passively undergo the stimuli of the external objects.[72] Drawing a sharp distinction between the (material) sense organ and the (immaterial) faculty of sense, Themistius claimed that the perceptual act transcends matter and entails a *iudicium.*[73]

In Simplicius' view, the rational soul is involved in a dynamic process that goes on between two extremes: on the one hand the separate unparticipated intellect,

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[66] *De rerum natura*, VIII.28, p. 294 and c. 29, p. 298. Memory requires the continuous attention of the spirit (VIII.10, p. 204).

[67] *De rerum natura*, VIII.3, 170.

[68] Aristotle, *De anima*, 416b32: "Sensus autem in moveri aliquid et pati accidit, sicut dictum est. Videtur enim quaedam alteratio esse" (translation by William of Moerbeke); in medieval and Renaissance commentaries this text is usually indicated as text 51. See also *De somno*, 454a9: "Sensation, as actuality, is a movement of the soul through the agence of the body"; and *De insomniis*, 459b4: "Sensation in active operation is a kind of change of state".

[69] *De anima*, 417b.

[70] See *De anima*, 417b16–21: "Sensitivi autem prima quidem mutatio fit a generante." (text 59).

[71] In Aristotle's view, actualizations of the senses causally result from the action of perceptual objects. Aristotle held that it is only in respect of the relevant aspects of a thing that a sense can be affected by it; see *De anima*, 424a17. Thus, these actualizations, *qua* physiological changes, trigger perceptual states grounding *discriminative*, and subsequently more narrowly defined *mental* acts. Cf. C.C.W. Taylor, "Aristotle's Epistemology", in S. Everson (ed.), *Companions to Ancient Thought*, vol. I: *Epistemology*, (Cambridge: Cambridge University Press, 1990), 116–142, on pp. 138–139.

[72] Themistius, *Paraphrasis eorum quae de anima Aristotelis*, traduction de Guillaume de Moerbeke, ed. G. Verbeke (Leiden: Brill, 1973), pp. 131–132; 177–178.

[73] Themistius, *Paraphrasis eorum quae de anima Aristotelis*, p. 179: "Propter quod ad iudicium et perceptionem terminatur; materia enim nulla potest discernere speciem quae generatur in ea. Materia enim est sine intellectu et sine iudicio et sine perceptione; ratio vera alia iudicat et species speciem percipit; species autem est sensus et ratio primi sensitivi; potentia enim ipsius est et forma."

on the other hand, the so-called *vitae secundae*, which are an integral part of the top-down unfolding of the higher rational forces.[74] In the downward projection, the rational soul moves from thought to perception, approaching the sensible things "from without".[75] Therefore, empirical knowledge is not a matter of external objects effectively moving the soul, but of the soul waking up in itself, or being moved from within. Discussing the alteration involved in the act of sensation, Simplicius resumed Themistius' line of interpretation, emphasizing that the motion involved in the act of sensation merely regards the sense organ (*sensorium*). Not the soul is alterated, but its instrument.[76] Moreover, according to well-known Neoplatonic principles, Simplicius held that the lower perceptual capacities depend on the higher cognitive capacities.[77] Indeed, the sense organs undergo the external stimuli inasmuch as they are animated.[78] This means that the soul assimilates the sensibles without receiving anything from them.[79] The alteration of the sense organs does not cause, but merely triggers the perceptual act, defined as judgement.[80] Also in the interpretation of *De anima*, II, text 121, concerning sense receiving forms without matter, Simplicius defined the act of sense as *iudicium*.[81]

In a quite pregnant interpretation of *De anima*, II, text 59, Averroes suggested that sensible objects cannot cause the act of sense without the help of a superior agent.[82] This pushed later authors to ask whether a superior agent is necessary, and if so, whether it is an agent sense. In his influential *De anima* commentary, John of Jandun (1285/89–1328) formulated a detailed argument for an agent sense based on the claim that sensation requires some *per se* and active principle which is not

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[74] Simplicius, *Commentaria in III libros De anima*, interprete Evangelista Longo Asulano (Venice: Hieronymus Scotus, 1564), f. 63^{rb}. For discussion of (Ps.)-Simplicius' psychology, see C. Steel, *The Changing Self. A Study on the Soul in Later Neoplatonism: Iamblichus, Damasius and Priscianus* (Brussel: Koninklijke Akademie van Wetenschappen, 1978), 121f.; P. Lautner, "Status and Method of Psychology According to the Late Neoplatonists and their Influence During the Sixteenth Century", in C. Leijenhorst, C. Lüthy, and J. M. M. H. Thijssen (eds.), *The Dynamics of Aristotelian Natural Philosophy from Antiquity to the Seventeenth Century* (Leiden: Brill, 2002), 92f.

[75] Simplicius, *In de anima*, 62^{vb}; cf. Steel (1978), 134. For the Neoplatonic interpretation of the human soul using the body as organ, see Blumenthal (1982), 79; (1976), 83; idem, "Some Platonist Readings of Aristotle", in *Proceedings of the Cambridge Philological Society* 207, n.s. 27 (1981), 1–16, on pp. 3–4.

[76] Simplicius, *In de anima*, ff. 34^{vb}–35ra: "neque ipsa quoque anima patiatur, aut alteretur, sed ipsum instrumentum (. . .) patitur passionem."

[77] Simplicius, *In de anima*, f. 51^{rv}.

[78] Simplicius, *In de anima*, f. 35ra.

[79] Simplicius, *In de anima*, f. 35ra: "Assimilatur igitur sensibilibus anima, non eo quod ab ipsis aliquid suscipiat, sed quia per propriam ipsis rationem agat."

[80] Simplicius, *In de anima*, f. 34^{v}: "Id est, quoniam oportet sensorium pati aliquid a sensibilibus, quae (. . .) passionem quandam in sensorio imprimant, in quo iudicatrix actio cietur."

[81] Simplicius, *In de anima*, f. 45^{rab}: "agens autem non faciendo, sed iudicando & complectendo."

[82] Averroes, *Commentarium magnum in Aristotelis De anima libros*, ed. F. S. Crawford (Cambridge, MA: The Mediaeval Academy of America, 1953), p. 219: "Opinatur enim quod prima perfectio sensus fit ab intelligentia agenti, ut declaratur in libro Animalium; secunda autem perfectio fit a sensibilibus."

to be identified with the sensible species, the latter being the receptive principle of sensation.[83] The agent sense is seen as a natural power of the soul, which acts on the passive sense, but only after the latter has been informed by the sensible species representing the sensible objects. Jandun's theory of an agent sense set the frame for the medieval[84] and Renaissance controversy.

Many Renaissance Aristotelians discussed the question whether sense perception was to be regarded as a passive undergoing or else as involving some active feature or factor, in particular as referred to the human soul.[85] Among the most significant positions developed were those by Agostino Nifo, Caietanus (Tommaso da Vio), Francesco Silvestri of Ferrara, Jacopo Zabarella, and Francesco Piccolomini.

In his treatise entitled *De sensu agente,*[86] Agostino Nifo (1469/70–1538) summarized and refuted Jandun's view. According to Nifo, Jandun thought that Averroes did not resolve the issue of whether there is a mover of the sensible. By contrast, Nifo held that Averroes left us only the task of determining the nature of this mover.[87] He purported to show that sensation is similar to a process of physical change. In the latter, three factors are involved: the form or agent, the underlying matter, and the universal and first agent in virtue of which all particular agents operate, that is, the first mover or God.[88] Besides the sensible form as proximate agent, also sensation requires the presence of the same universal agent, the first mover, by virtue of which all sensible entities operate. The sensible object provides the formal content in our sensation but it cannot cause the act of knowledge. Nifo endorsed a position rather similar to those of Thomas Aquinas, Giles of Rome (ca. 1243–1316) and Gaetano of Thiene (1387–1465). Aquinas held that sensible species are brought about by an action of bodies, inasmuch as they participate in a mode of action proper to separate substances.[89] Giles of Rome held that the sensibles can cause intentions

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[83] John of Jandun, *Super libros De anima subtilissimae quaestiones* (Venice: Hieronymus Scotus, 1587), l. II, q. 16, cols. 129–151.

[84] The issue was also discussed by Alphonso Vargas (ca. 1300–1366), Taddeo da Parma (fl. fourteenth-century), Paul of Venice (ca. 1372–1429), Apollinaris Offredus (late fifteenth-century) and Gaetano of Thiene (1387–1465); see L. A. Kennedy, "Sylvester of Ferrara and the Agent Sense", in *New Scholasticism* 40 (1966), 464–77; E. P. Mahoney, "Agostino Nifo's *De sensu agente*", in *Archiv für Geschichte der Philosophie* 53 (1971), 119–142.

[85] For an overview of the texts involved in this debate, see Marcantonio Zimara, *Tabula dilucidationum in dictis Aristotelis et Averrois* (Venice: Hieronymus Scotus, 1548), f. 143^{v}, who also mentions *Metaphysics*, VII, text 31 and XII, text 18.

[86] See Agostino Nifo, *Destructiones Destructionum Averroys cum Agustini Niphi de Suessa expositione, Eiusdem Augustini quaestio de sensu agente*(. . .) (Venice: Bonetus Locatellus, sumptibus Octaviani Scoti, 1497).

[87] *De sensu agente*, f. 128.

[88] *De sensu agente*, f. 128.

[89] Cf. *De potentia*, in *Quaestiones disputatae*, 2 Vols. (Turin: Marietti, 1953), q. 5, a. 8: "Haec autem est actio corporis, quae non est ad transmutationem materiae, sed ad quamdam diffusionem similitudinis formae in medio secundum similitudinem spiritualis intentionis quae recipitur de re in sensu vel intellectu; et hoc modo sol illuminat aerem, et color speciem suam multiplicat in medio. Uterque autem modus actionis in istis inferioribus causatur ex corporibus caelestibus." Thomas develops in this passage a view similar to the doctrine of universal force in al-Kindī, which,

only by virtue of a superior agent.[90] And according to Gaetano of Thiene, we must posit a twofold mover in sensation, namely, the sensible object and the agent sense, which is an Intelligence.[91]

In *De sensu agente*, Nifo attributed the active aspects of sensation not to the human soul, but to separate substances, and in the end to God.[92] However, this work was written before he dissociated himself from the Averroist interpretation of Peripatetic psychology.[93] In his *De anima* commentary, by contrast, he invoked the authority of Themistius and Simplicius to claim that the senses are not passive, but active, namely inasmuch as they are capable to judge what they receive.[94]

Discussing the issue whether sense is a passive potency, Tommaso de Vio (1468–1534), better known as Caietanus, claimed that sense is neither "pure activa", since it receives its own immanent operation, nor is it purely passive, because it is some sort of act.[95] The doctrine of an agent sense is on no condition to be accepted, however. The authors who endorse this idle phantasy confound not only agents operating *actione media* and those operating *sine actione media*, but also immanent and transient actions, the former being operations only in a grammatical sense, because in reality they are *qualitates*. Moreover, their analysis of the second act of sense as a natural phenomenon misses any ground. Finally, "speciem sensibilem et sentire distinguunt in duos per se effectus, nescientes speciem sensibilem in duobus generibus considerare entium scilicet et cognoscibilium."[96] The sensible species, as spiritual entities, are nobler than the sensible object they represent. This is not due to any agent sense or separate intelligence, however. As Aquinas already explained, the spiritual being of the sensible species is caused by the sensibles inasmuch as they participate in the separate forms.[97]

In his polemics with the doctrine of agent sense, Caietanus remained rather vague on the active nature of perception: sensation is an immanent operation, and thus a

originating in the Neoplatonic doctrine of emanation, was proposed already by Robert Grosseteste and Roger Bacon. For discussion, see also G. Klubertanz, "*De potentia* 5.8: A note on the Thomist Theory of Sensation", in *The Modern Schoolman* 26 (1949), 323–231.

[90] Giles of Rome, *Quodlibeta* (Bologna 1481), fols. G6^{vb} – H1^{r} (cited in Mahoney (1971), 136–137).

[91] Gaetano of Thiene, *Super libros de anima. Eiusdem quaestiones de sensu agente et de sensibilibus communibus ac de intellectu* (Venice: s.i., 1493), ff. 81^{v}–83^{v}; cf. Mahoney (1971), 133–134.

[92] *De sensu agente*, f. 129.

[93] For discussion, see L. Spruit, *Species intelligibilis. From Perception to Knowledge*, Vol. II: The Renaissance Controversies, Later Scholasticism and the Elimination of Intelligible Species in Modern Philosophy (Leiden: Brill, 1995), 54–55.

[94] Agostino Nifo, *Expositio subtilissima collectanea commentariaque in III libros Aristotelis De anima* (Venice: Hieronymus Scotus, 1553; first edition: Venice 1503; second (revised) edition: Pisa 1520), f. 128^{r}. That sensing involves also judging was traced in Alexander's texts by Marcantonio Zimara; see his *Tabula dilucidationum*, f. 143^{v}: "Sentire non est pati; sed iudicare, neque discernere. Alexan. in paraphrasi de anima in capitulo de intellectu practico et speculativo."

[95] *Commentaria in De anima Aristotelis*, ed. P. I. Coquelle, 2 Vols. (Rome: Apud Institutum Angelicum, 1938–39), Vol. I, p. 159.

[96] *Commentaria in De anima Aristotelis*, p. 161.

[97] *Commentaria in De anima Aristotelis*, pp. 252–254

quality rather than a "real" operation. His fellow friar and commentator Francesco Silvestri of Ferrara (1474–1528), confutating the same view of the agent sense, formulated more articulated views on the active features of perception. Discussing the issue whether sense potencies are passive or active, Silvestri listed seven arguments for the active nature of perception: if sense perception were passive, the vegetative potencies would be nobler; the sensible object cannot affect the (immaterial) faculty of sense; the senses judge and thus operate, the gaze of a menstruating woman may soil intermediate air and mirrors;[98] any form (and thus also sense) operates; a producing potency must be active; and, finally, "materiae est pati; formae est agere."[99] However, in order to establish this issue, one should distinguish between potency as active, that is, as "principium transmutandi aliud inquantum aliud" (as heat sets fire to wood), and potency as passive, that is, as "principium mutationis" (wood easily catching fire). Moreover, "pati" has a threefold meaning: (i) "aliquid removitur a sua naturali dispositioni" (water becoming warm through heating), (ii) "aliquid abiicitur a re" (getting sick or healthy), and (iii) "aliquid recipit id ad quod erat in potentia" (receiving a perfection). Now, keeping in mind Aquinas' view that sense "habet operationem ad suum obiectum",[100] Silvestri formulated his final conclusion. First, sense undergoes its object inasmuch as it receives its form; if sensation did not involve any kind of passivity, we should always perceive, which is false. Second, the potencies of the soul are not active in a strict sense, but rather operative. This distinction between "active" and "operative" saves the active nature of sensation, without entailing the contradictory notion of a sense affecting itself. Thus, the perceptual act, produced simultaneously by the object and the faculty of sense, is an immanent operation.[101] The rather subtle distinction between action and operation permits to reinterpret four of the arguments listed in favor of active sense. As regards the first argument: "non simpliciter omne activum est nobilius quolibet passivo." In reply to the second argument Silvestri observed that matter may affect the immaterial "actione spirituali", while the argument of the menstruating woman soiling the mirror can be explained referring to the vapors produced by her blood and emanating from her eyes, vapors which are not to be confounded with (actively produced) species.[102] Discussing the same issue in his epitome of *De anima* Crisostomo Javelli

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[98] This argument recurred in other *De anima* commentaries; cf. Ludovico Buccaferrea, *Lectiones super III libros de anima Aristotelis* (Venice: Johannes Baptista Somachus et fratres, 1566), f. 97ra; and by the same author, *Lectiones in Aristotelis libros quos vocant Parva Naturalia* (Venice: Hieronymus Scotus, 1570), f. 87^{vb}. Buccaferrea also referred to the basilisk, the serpent which kills his victims with his glance.

[99] Francesco Silvestri of Ferrara, *Quaestiones luculentissimae in tres libros de anima* (Venice: Hieronymus Scotus, 1601; first edition: Venice, 1535), p. 32.

[100] Silvestri refers to *De veritate*, q. 16, art. 1, ad 13.

[101] Silvestri refres to *Metaphysics*, IX, text 16.

[102] The n°s 3, 5, 6, and 7; see Silvestri of Ferrara, *Quaestiones luculentissimae in tres libros de anima*, p. 33.

(1470/72–ca. 1538), another Dominican friar, formulated a position very similar to that of Silvestri.[103]

Addressing the issue of agent sense, Silvestri formulated four arguments purporting to show its existence: sense needs to be actualized; the necessity of "aliquid facere" on sensitive level to; sensation has to be attributed to an active entity; and Averroes' interpretation of *De anima*, II, texts 59–60. As regards the latter, Silvestri argued that an "intelligentia agens movens orbem Lunae" is unfit as agent sense: a universal cause cannot produce particular effects, sensation would no longer be an individual act, and sensation would depend on arbitrariness (because dependent on the species provided by the intelligence at will) or fate (which clearly shows that the need of an intelligence for sensation is simply absurd). Locating the agent sense in human soul does not solve the issue either, because it would lack an organ, it is not compatible with the theories of intro- and extramission (the agent sense contacting distant objects would be too weak to produce vision), and it is unable to co-operate with the sensible object (since it cannot possess the effect to be produced, that is, the species). Rejecting also the opinion that every single sense has its active factor generating sensation, Silvestri advanced his final arguments against the agent sense: it lacks a proper object, it would turn sensation into a transient action, and, finally, sensation could be realized without object.

If sense were purely passive, that is, merely consisting in being acted upon by the sensible object or the species, it would be more appropriate to hold that the visible object or its species sees, rather than to say that man sees. By contrast, Silvestri holds that the sensible object (in virtue of its participating in the separate substances, as in Aquinas) causes its own similitude in the sense organ, thus actualizing sense, which in turn generates sensation.[104]

Like Agostino Nifo, and other Peripatetic philosophers before him, Jacopo Zabarella (1533–1589) devoted a separate treatise to the issue of agent sense.[105] The issue is related to two other questions, namely, whether the object merely impresses species, and whether sensation, after the generation of the species, is caused by an agent.[106]

As regards the first issue, Zabarella presented three arguments for an agent sense: the species as spiritual entity cannot be produced by the object alone, the Aristotelian parallel between sense and intellect (the phantasm being unable to produce the intelligible species), and Averroes' comment to *De anima*, II, text 60. Then

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[103] Crisostomo Javelli, *Praeclarissimum Epitoma super totam naturalem philosophiam* (Venice: Hieronymus Scotus, 1531), ff. 14^{r}–15^{r}, where he argues for the thesis that sensation is an operation, rather than an action; cf. fol. 15^{r}: "Sentire causatur active ab anima principaliter et a potentia sensitiva immediate velut ab instrumento. Ergo non causatur active solum ab obiecto sensibili".

[104] *Quaestiones luculentissimae in tres libros de anima*, pp. 34–36.

[105] Jacopo Zabarella, *Liber de sensu agente*, in *De rebus naturalibus libri XXX* (Venice: Apud Paulum Meietum bibliopolam Patavinum, 1590), pp. 582–599. This treatise is reprinted also in Jacopo Zabarella, *In tres Aristotelis libros De anima* (Venice: Franciscus Bolzetta, 1605), ff. 105^{v}–112^{r}.

[106] On Zabarella's theory of sensation, see J. B. South, "Zabarella and the Intentionality of Sensation", *Rivista di storia della filosofia* 57 (2002), 5–25.

he analysed the opinions of some predecessors, in particular Agostino Nifo and Thomas Aquinas. The position of the former, who extended God's causality too far and invoked the intervention of God in the generation of sensation, is rejected. God exercises his influence on the world through the first heaven, that is, through motion and light, which are both unable to produce "weak" entities as species, the ontological status of which is qualified as *in fieri*. Zabarella also rejected Aquinas' view of the sensible objects generating species inasmuch as they participate in separate forms. While natural objects may be similar to superior entities, they cannot transcend their ontological bounds. The "spiritual" being ascribed to the species is not to be confounded with that of the separate substances. Also the opinion endorsed by Buccaferrea and other "recentiores" who reduced the spirituality of sensible species to their being produced by the (heavenly) light is unacceptable.[107] As regards the production and ontology of species, Zabarella resumed the position of Albert the Great: "qualitates sensiles talem habere naturam ut multiplicent in medio speciem suam spiritualem."[108] This multiplication does not consist of the production of forms in matter, but in the generation of forms alone, which for their total dependence upon the producing cause are to be regarded as "inferior", that is, "tenuous" entities. This view enabled Zabarella to reject the above-mentioned arguments for an agent sense: (1) species are *minoris entitatis*, the object being "nobler" than the species it produces, and therefore they cannot play the primary causal role in sensation; (2) the parallelism between sense and intellect does not hold, because the phantasm is not the object of the intellect; (3) Averroes merely raised an issue, he did not introduce an agent sense.[109]

In the next two chapters, Zabarella confutated the positions of Thomas, Jandun and Duns Scotus. Thomas' position, stressing sensation as passive,[110] entails as a matter of fact the inferiority of sense with respect to its objects. Jandun's claim for an agent sense as based on the parallel between sense and intellect is not well grounded because their products, respectively sensation and intelligible species, cannot be compared.[111] Finally, Scotus' view of a species bringing about sensation[112] cannot be accepted, because the species is only a *forma genita.*[113]

Zabarella argued for sense possessing both active and passive features. Sensation presupposes the reception of species in the sense organs, but does not consist in a mere reception: "facta autem receptione anima utitur organo dum speciem in eo receptam iudicat: itaque recipere est organi animati, iudicare autem est solius

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[107] *Liber de sensu agente*, pp. 582–588.

[108] See, for example, Albert the Great, *De anima*, ed. C. Stroick (Münster: Aschendorff, 1968), II, tr. 3, cap. 6, p. 106.

[109] *Liber de sensu agente*, pp. 589–592.

[110] Thomas Aquinas, *Sentencia libri de anima*, in *Opera omnia*, ed. Leonina, vol. XLV.1, ed. R. A. Gauthier (Rome-Paris: Typis Polyglottis Vaticanis, 1984), III.3.

[111] For a balanced comparison of sense and intellect, see also Jacopo Zabarella, *In tres Aristotelis libros De anima*, f. 103^{v}.

[112] John Duns Scotus, *Ordinatio*, I, dist. 3, pars 3, in *Opera omnia*, ed. C. Balic et al., vol. III (Vatican City: Typis Polyglottis Vaticanis, 1954).

[113] *Liber de sensu agente*, pp. 593–595.

animae."[114] If sensation were only passive, also the air would be able to smell or see. Moreover, that vision does not come down to the reception of species is argued for with the distinction between (unattentive) gazing and (attentive) seeing. Indeed, neither the object nor its species cause vision, the latter being an act of judgement. Zabarella drew a neat distinction between his position and Simplicius' interpretation of *De anima*, II, text 60, where the Neoplatonic commentator argued for inborn forms and thus implicitly rejected any reception of forms or species. Sensation is to be viewed as an immanent act, caused by sense "per solam emanationem";[115] yet, the faculty of sense judges received and not native forms. Sensation is articulated in three distinct stages: "receptio speciei in organo", "anima profert iudicium", "recipitur iudicium in toto composito", the first stage being the only one which chronologically precedes the other two. According to Zabarella, his view avoids the absurdities of the views developed by Aquinas (the agent is not less noble than the undergoing organ), Jandun (sense is not unnecessarily duplicated) and Scotus (the object having no direct role in the generation of sensation).[116] As a matter of fact, Zabarella stressed the activity of the sense power at the expense of the reception of species. At this point it should also be noticed that elsewhere, namely in his *De visu*, Zabarella redefined the term intentionality, which refers to an activity of the soul, that is, its attention or attentiveness (*diligentia*), and no longer to an attribute of the (sensible) species.[117] Thus, there is no sensation without concomitant awareness.[118]

Surprisingly, also Francesco Piccolomini, Zabarella's colleague and lifelong rival in the University of Padua,[119] endorsed in his theory of vision the central view of Zabarella: vision consists essentially in judgement. Identifying species and perceptual act, however, Piccolomini radicalizes this view:

> Quare colligo ex re visibili prodire actionem spiritualem auxilio luminis; eamque in oculi recipi & iudiciari, adeò ut passio oculi desinat in actionem: Illa spiritalis actio coloris latè posset dici species, quatenus repraesentat visibile, propria tamen specie constituitur, dum iudicatur.[120]

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[114] *Liber de sensu agente*, p. 596. See also Jacopo Zabarella, *In tres Aristotelis libros De anima*, f. 99^{r}, where Zabarella refers to John Philoponus for the thesis that the perceptual judgement presupposes the reception of species in the sense organs.

[115] See also South (2002), 24.

[116] *Liber de sensu agente*, pp. 596–599.

[117] Most remarkably, analyzing sensation Zabarella used a metaphor, namely that of the soul "absorbing" (imbibere) its objects, which he rejected for intellectual knowledge. See *Liber de speciebus intelligibilibus*, in *De rebus naturalibus libri XXX*, lib. VI, 987–88. For discussion, see Spruit (1995), 228–230.

[118] See *De visu*, in *De rebus naturalibus libri XXX*, lib. I, cap. 6; cf. South (2002), 16.

[119] See C. Lohr, *Latin Aristotle Commentaries*. II: *Renaissance Authors* (Florence: Olschki, 1988), 331 and 497.

[120] Francesco Piccolomini, *De sensu visus liber unus*, in *Librorum ad Scientiam de Natura attinentium partes V*, Vol. 2 (Venice: Haeredes Francisci de Franciscis, 1596–1600), vol. II, ff. 29^{r}–45^{r}, on f. 40^{v}.

In his critical analysis of Galen's extramission theory, Piccolomini also argued for the view that vision consists essentially in a judgement triggered by a "moderate excitation".[121]

3 Conclusion

In contemporary theories of active perception, perceptual activity is understood in a strong, literal sense that goes beyond the views that invoke it merely in the sense of top-down control of information processing within the architecture of a vision system or the brain. Thus, a visual system is seen as actively picking up information, rather than passively transducing it. Information gathering is a dynamic process that responds at once to events in the visual world, to the system's evolving understanding of that world, and to changing requirements of the vision task.

Renaissance theories have a far more restricted field of exploration than that of contemporary theories of perception. They aim at explaining the conditions and modalities of inner representation of the outer world. Relevant causal flows are primarily seen as one-way or linear: from the world through sensory systems to perception to cognition. Whenever they take into consideration the possible internal structure of perceptual schemata, the latter are seen as simply innate. Ficino, for example, viewed perception as a top-down, conceptually driven processing. In his cognitive psychology, Ficino assumed the existence of *formulae* which subserve actual perception and imagery.[122] Thus, sense perception is not viewed as a matter of storing descriptions of the outer world, but as the continual adaption of raw perceptual stimuli to inner schemata which specify how to direct our attention. Through such processes of controlled perceptual exploration we collect the information that takes us from a vague, preattentive appreciation that something is out there to a detailed understanding of what it is. And it is through this attentive process of searching out the distinctive features and feature complexes of the things before us that we come to recognize and categorize them, to perceive them as whatever they may be.

According to Cusanus and Telesio, taking duly into account their fundamentally different approaches in cognitive psychology, perceptions are created in the mind or the spirit and they are surely richer than the species or traces left in the spirit. This argues against a theory of "direct" perception, and for the view of perception as the conclusion of unconscious and (at least partially) inductive inference. In Telesio's view, merely traces are stored in the spirit, no species or images. No thing in the soul is the percept or image. Rather, perceptual experience consists in the ongoing activity of active exploration of the environment, which takes different forms according to what is being perceived. Thus, each new "question" takes its cue from

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[121] Francesco Piccolomini, *De sensu visus liber unus*, f. 41^{v}; see also f. 43^{v}.
[122] See *Theologia platonica*, III.2.

the answers to the previous ones. The stored procedures direct our sensory system to make what amount to tests and measurements.

The Aristotelian theory of perception, centered on the soul's capacity of grasping forms without matter, tackled the formidable issue of reconciling the tension between physical processes and phenomenological aspects of perception. How can a process in which the perceiving subject is the passive recipient of a stimulus be the physical aspect or realization of a process in which the perceiver grasps perceptual content, that is, forms without matter? Renaissance Aristotelians distinguished sharply between the sense organ touched by the sensible objects and the ensuing act of perception by the power of sense or sensitive soul: the former is seen as a stage devoid of any contribution by the soul, while the latter is seen as a stage laden with (mental) content. According to the Renaissance Peripatetics discussed above, the part of the human agent in perception cannot be ignored. Human soul has an active, that is, operative or judging, role in perception: the soul reconstructs the physical world from the information deposited in the sense organ by the sensible species. Although the actualization of the sense organ precedes the soul's operation chronologically, physiological and mental stages are only two different levels of description of the same phenomenon. Perception is not received as the result of the stimulation of our sense-organs, rather perception is an attentive awareness about the world in view of the stimulation of our sense-organs.

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Time and Perception in Late Renaissance Aristotelianism

Michael Edwards

The concept of time underwent important transformations in the seventeenth century. New theories of time as an abstract, "absolute" entity, parallel to space but independent of motion and of the human mind, were formulated by philosophers including Pierre Gassendi and Isaac Barrow, and, of course, by Newton.[1] "Absolute, true and mathematical time", Newton argued, "in and of its own nature, without reference to anything external, flows uniformly and by another name is called duration", and is distinguished from "relative, apparent and common time", which is "any sensible and external measure. . .of duration by means of motion."[2] Newton distinguished between the real nature of time and its measures, which are "commonly used instead of time." A feature of these new concepts of absolute time that few modern scholars have highlighted, however, is their relationship with the soul or mind. These theories presented a relatively thin account of how we become aware of time. If anything, the emergence of the concept of "absolute time" represented a rejection of the notion that the way in which the human soul or mind internalized, or *perceived*, time was at all problematic or interesting. I want to argue that this approach, together with the assumption derived from it that the relationship between time and the sensitive soul was relatively simple, would have seemed less than intuitive to Gassendi, Barrow and Newton's late Aristotelian contemporaries and predecessors. The arguments of these Aristotelian authors have frequently been neglected by historians, many of whom have wrongly assumed that, philosophically speaking, late scholasticism was a relatively sterile field. However, on the question of time and the sensitive soul, as on so many other questions, their approach was far from sterile. In this paper, I will examine and reconstruct a series of connections made between time and perception

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[1] P. Ariotti, "Toward Absolute Time: Continental Antecedents of the Newtonian Conception of Absolute Time", *Studi internazionali di filosofia* 5 (1973), 141–68 and K. Schuhmann, "Zur Entstehung des neuzeitlichen Zeitbegriffs: Telesio, Patrizi, Gassendi", *Philosophia Naturalis*, 25 (1988), 37–64.

[2] Isaac Newton, *The Principia: Mathematical Principles of Natural Philosophy*, trans. I. Bernard Cohen (Berkeley: University of California Press, 1999), p. 408.

S. Knuuttila, P. Kärkkäinen (eds.), *Theories of Perception in Medieval and Early Modern Philosophy,*

by late Aristotelian authors, in order to show that this tradition offered a vibrant and philosophically interesting alternative understanding of how time related to perception.

I interpret the term "late Renaissance Aristotelianism" broadly here, as a description of the work of authors from a variety of confessional and doctrinal backgrounds from across Europe, writing commentaries on Aristotle and textbooks of natural philosophy in the late sixteenth and early seventeenth centuries.[3] I will examine treatments of time and perception in the *De anima* commentaries and natural philosophy textbooks of some well-known, and some more obscure, Aristotelian authors writing between the 1570s and the 1630s, including the work of Zabarella and Franciscus Toletus, the Italian Jesuit Hieronymus Dandinus' *De corpore animato libri septem* (1610), the Spanish cleric Juan de Guevara's *De interiori sensu libri tres* (1622), and the comprehensive commentaries produced by the Portugese Jesuits of the Collegium Conimbricense (the Coimbra commentaries). This chapter is not intended as an exhaustive contextual reading of the positions adopted by the individual authors, but rather as a broad account of approaches to the question of time and perception within the Aristotelian tradition in the early modern period. It is also intended as a corrective to the assumption that everything to be said about time, and particularly about the way that time relates to the soul, in the late Aristotelian tradition was found in commentaries on the *Physics*. To these authors, Aristotle's *De anima* was an important part of the discipline of natural philosophy, and therefore their discussions of time can profitably be read against the complex and vibrant background of late Aristotelian psychology.

1 Time and the Soul in Late Aristotelian *Physics* Commentaries

The version of Aristotle's theory of time available to readers in the late sixteenth and early seventeenth centuries differed in many respects from that read today. In the *Physics*, Aristotle famously defined time as "the number of motion according to former and latter" (*Physics* IV.11, 220a24–25): that is, as a numbering of motion by the soul directed by the fact that motion is continuous, with "former" and "latter" parts. Time, he argued, is thus closely related both to change and to motion, but is neither motion nor change. It is continuous, because number is continuous, and eternal, and flows evenly from past to future. The present, or now, marks the point at which the past becomes the future, but it neither forms part of time itself nor has any dimensions, because for Aristotle the divisible continuum of time cannot consist of discrete and indivisible points. As the "number of motion", time is a kind

[3] On the late Aristotelian textbook and commentary traditions, see P. Reif, "The Textbook Tradition in Natural Philosophy, 1600–1650", *Journal of the history of ideas* 30 (1969), 17–32, and C. B. Schmitt, "The Rise of the Philosophical Textbook", in C. B. Schmitt, Q. R. D. Skinner, E. Kessler and J. Kraye, (eds.), *The Cambridge History of Renaissance Philosophy* (Cambridge: Cambridge University Press, 1988), 792–804.

of mental representation of motion, and involves an operation performed by the soul, and specifically by the intellect.

However, like most of his philosophy, by the sixteenth century Aristotle's account of time had been filtered through the Arabic, Hellenistic and Latin commentary traditions, and had also been reconciled with Christian theology and Ptolemaic cosmology. Late Aristotelian authors commonly located time within the broader category of duration (*duratio*), or the remaining in existence of a being. Duration contained the further tripartite structure of eternity, *aevum*, and time. Eternity (*aeternitas*) was infinite, possessing no beginning and no end, and was the duration of God. *Aevum* had a beginning but no end, and was the time of celestial beings and angels, whilst time (*tempus*) had a beginning and an end, and related to created, sublunary beings. All treatments of time in this period therefore need to be seen within this broader theological and philosophical framework.

Time was also distinguished into its real and imaginary aspects, a distinction that was most commonly made by Jesuit commentators such Petrus Fonseca and the Collegium Conimbricense. Imaginary time (*tempus imaginarium*) was an unreal duration within which periods of real time were situated. It was a medieval scholastic extrapolation from *Physics* IV, which was often connected to imaginary space (*spatium imaginarium*). Fonseca argued in his commentary on Aristotle's *Metaphysics* that there are two forms of time, real and imaginary: real time is the number of heavenly motion, but imaginary time parallels imaginary space, in that it "contains" real times or durations: in effect, it is a kind of temporal space in which real times are located.[4] A similar concept of imaginary time was discussed by the Coimbra commentator, who opposed it to the "singular time" defined by Aristotle, arguing that it is "also one in being, and universal in measuring", and also "older, more equal and more universal."[5] Both Fonseca and the Coimbra commentator denied that imaginary time was in any sense a figment of the imagination. It was "imaginary", but not "imagined". This distinction, common to most Jesuit accounts, stemmed from the assumption that, as with imaginary space, God existed in imaginary time before the creation of the world. However, Roderigo Arriaga, a Spanish Jesuit who was Professor of philosophy at Prague university in the 1630s, argued that imaginary time is "a rational being, or a successive time invented by us to simulate real time", which resembles imaginary space and is used by us to

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[4] Petrus Fonseca, *Commentariorum. . .in metaphysicorum Aristotelis stagiritae libros tomus secundus*, (Cologne: Sumptibus Lazari Zetzneri Bibliopolae, 1615), cols. 733–734: ". . .duo esse tempora universalia, quibus mensurantur omnia, quae tempori subsunt; unum reale, quod est idem re cum motu primi mobilis. . .alterum, quod dici solet imaginarium, non quod ab imaginatione pendeat, quasi nullum sit, nisi quatenus illud imaginamur ut Chimera, aut sphinx, sed quia nihil reale est, sed sola capedo, ut ita dicam, motuum omnium; quemadmodum locus, qui imaginarius dicitur, nihil est aliud, quam capedo omnium corporum."

[5] Collegium Conimbricense, *Commentariorum collegii conimbricensis societatis iesu, in octo libros physicorum Aristotelis stagiritae, secunda pars* (Cologne: Sumptibus Haeredum Lazari Zetzneri, 1625), col. 130: "Adverte etiam, praeter hoc tempus singulare, dari aliud, unum quodque in essendo, & universale in mensurando, nempe tempus imaginarium, quod illo est antiquius, aequabilius & universalius."

understand durations that we cannot understand in themselves, or conceptualize in any other way, such as God's eternity.[6] Finally, time was discussed in terms of the category *quando*, or "when", both in commentaries on Aristotle's *Categories*, and in natural philosophy texts. All of these different aspects of time were not mutually exclusive, but rather formed part of a complex understanding shared by most late Aristotelian authors.

Most late sixteenth and early seventeenth century *Physics* commentaries presented a model of how the soul relates to time that strongly emphasized the role of the intellect and intellection. Aristotle's definition of time as the "number of motion according to former and latter" required the involvement of the intellect, because only the rational part of the soul can number. Moreover, Aristotle questioned at *Physics* IV, 223a21–a29 whether time could exist at all without the rational, numbering part of the soul. On the face of it, it is not clear if Aristotelian natural philosophy could really offer an account of the "perception" of time at all, given the emphasis that it placed on the intellect over the sensitive soul. However, I want to suggest that, for a number of late Aristotelian authors, the questions of whether time is apprehended by the sensitive power of the soul through the act of perception, and of what role time plays in sense-perception itself, were important issues. Most late Aristotelian authors attributed both intellectual and sense-perceptual content to time: that is, they argued that we become aware of time through the operation of both the rational and the sensitive powers of the soul. This dual presentation derived from the definition of time as the "number of motion according to former and latter." Considered as a number, time must involve the intellect, because only the rational power of the soul can number. However, time is also a number derived from motion, which is a common sensible and therefore perceived by the sensitive soul. Time is not motion, but it cannot exist without motion: nor can it be apprehended without the operation of the sensitive soul.

Although most late Aristotelian *Physics* commentaries made it clear that time contains an element that is perceived by sense, few developed this bare assertion. This was mainly because accounts of time in these works were overwhelmingly concerned with its ontology, rather than with the psychology or the phenomenology of its perception. As Johannes Baptista Rubeus argued in his *Physics* commentary, what was at stake in these commentaries was the question of the being of time (*de entitate temporis*).[7] It was also primarily a question of the role played by the intellect in time. Consequently, late Aristotelian *Physics* commentaries did not offer an account of the perception or cognition of time in any recognisable sense, since they paid little attention to the way in which the soul generates an internal representation of time as an external object. Their concern was not with the experiences or

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[6] R. Arriaga, *Cursus philosophicus* (Antwerp: Ex officina Plantiniana Balthasaris Moreti, 1632), p. 455: "Respondeo esse ens rationis, seu tempus a nobis fictum successivum ad similitudinem realis; sicut in simili dixi supra de spatio imaginario, ut in ordine ad illud tempus fictum explicemus diversitatem durationum, eo quod non possimus illas in seipsis cognoscere."

[7] J. B. Rubeus, *Commentaria dilucida in octo libros physicorum Aristotelis*, (Venice: Apud Ioannem Guerilium, 1598), p. 124.

mental processes involved in an awareness of time, but with time's status as a kind of being.

To the extent that they did consider the relationship between time and the soul, however, these authors generally followed the approach outlined in the *Physics* itself and pursued by the medieval commentary tradition, which focused on the question of whether the contribution of the intellect to time makes it a real or a rational being (*ens reale* or *ens rationis*). In common with most late Aristotelian *Physics* commentaries, both the Italian Dominican Michaele Zanardi and the Coimbra commentator identified three possible models of how time might relate to the soul.[8] Firstly, that time was a wholly mind-dependent, or "rational", being (*ens rationis*), a position that Zanardi and the Coimbrans associated with Galen and Augustine.[9] This position had been heavily criticised in medieval scholasticism, culminating in the inclusion of the proposition that "time is not in things themselves, but only in the apprehension of the mind" amongst the 219 articles condemned by the Bishop of Paris in 1277.[10] Secondly, that time was a wholly real being (or *ens reale*), that owed no part of its being to the soul. Thirdly, that time was a mixed being, partly real and partly rational.

Like most of their contemporaries, Zanardi and the Coimbrans entirely rejected the first option: only the second and third positions were really seen as viable. In fact, most early modern commentators, with the exception of Franciscus Toletus, supported the third position: that time is partly real and partly "rational" or mental. This position was commonly expressed in terms of the distinction originally formulated by the Arab philosopher Averroes, or Ibn-Rushd, but adopted by many authors working in the Thomist tradition, between the material and formal aspects of time. In his *Physics* commentary, Averroes attempted to reconcile the ideas of time as a real, external motion and time as a mental construct by suggesting that time is a composite entity, composed of both external motion and the mental construct of "number."[11] Averroes made the anti-Platonic point that number is not a property

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[8] M. Zanardi, *Commentaria cum quaestionibus et dubiis in octo libros de physico auditu Aristotelis*, (Coloniae Agrippinae: Apud Antonium Boetzerum, 1622), p. 143; Conimbricense, *In octo libros physicorum*, col.131; see also Collegium Complutense, *Disputationes in octo libros physicorum Aristotelis* (Paris: Apud Dionysium Thierry, 1636), p. 442.

[9] See Zanardi, *Commentaria cum quaestionibus et dubiis in octo libros de physico auditu Aristotelis*, p.143, also Complutense, *Disputationes in octo libros physicorum Aristotelis*, p. 442 and Conimbricense, *In octo libros physicorum*, cols. 131–32.

[10] "Quod aevum et tempus nihil sunt in re, sed solum apprehensione" was proposition number 86 of the 219 articles. On the condemnation, see N. Kretzmann, A. Kenny, and J. Pinborg (eds.), *The Cambridge History of Later Medieval Philosophy* (Cambridge: Cambridge University Press, 1982), J. F. Wippel, "The Condemnations of 1270 and 1277 at Paris", *The Journal of Medieval and Renaissance Studies* 7:2 (1977), 169–201, and R. Hissette, *Enquête sur les 219 articles condamnés à Paris le 7 mars 1277*, (Louvain: Publications Universitaires, 1977), 152–154.

[11] Averroes, *Aristoteli de physico auditu libri octo, cum Averrois Cordubensis variis in eosdem commentariis*, (Venice: Apud Junctas, 1562), p.187^{r}. On Averroes, see C. Trifogli, *Oxford Physics in the Thirteenth Century (ca. 1250–1270): Motion, Infinity, Place and Time*, (Leiden: Brill, 2000), 219–230, and C. Trifogli, "Averroes' Doctrine of Time and Its Reception in the Scholastic Debate",

of real things, and therefore exists only in the mind.[12] Motion is the material or matter of time (or time *materialiter*), and number is its form (or time *formaliter*). Thus whilst motion exists in the world, time would not exist if the mind did not number motion and consequently give it form. Motion, as the material aspect of time, therefore represents potential time, because time exists actually only when the mind (time's formal aspect) numbers before and after in motion. For Averroes, time therefore had an internal and an external component, but only the former depends on the mind. Although Averroes' position was criticized by thirteenth century commentators such as Roger Bacon and Richard Rufus, who maintained a strictly realist view of time, it influenced many later thinkers.[13]

Aquinas also advanced a similar position. His discussions of all aspects of the question of time, both in his *Physics* commentary and in the questions concerning God's eternity in the first part of the *Summa theologiae* (*Summa* 1.10.1-6) were very important for late Renaissance commentators, and particularly for Jesuit authors. He argued in his commentary on the *Physics* that time, like motion, "does not have a perfect existence outside the soul."[14] As time, like motion, exists only as an indivisible part that is numbered or apprehended by the soul, without the soul it is an imperfect being (*ens incompletum*). Aquinas therefore attributed a role to the mind in the construction of time that parallels Averroes' position in some respects: both agreed that time cannot have an actual, or complete, existence without the soul.

This distinction between the material and formal aspects of time had important implications for any account of our awareness or perception of it. For, unlike other sensible objects, of which the soul forms a representation or image through the process of sense-perception, time was not simply an external object whose form was internalized, but a composite of internal and external elements. In many respects, this dynamic between internal and external was as important to the late Aristotelian concept of time as that of form and matter. However, for these authors the connection between time and perception involved another element of internality, because time and the concept of temporal sequence also played a role within accounts of sense-perception itself. These issues are interesting and important, but were generally only sketched out in late Aristotelian *Physics* commentaries. Considering treatments of time in the late sixteenth and early seventeenth century *De anima* commentary tradition, and in the sections of natural philosophy textbooks dealing with the soul, produces new insights into how time related to the soul in terms of perception, but also creates a more accurate picture of the complexity of the late Aristotelian theory of time.

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in P. Porro (ed.), *The Medieval Concept of Time: Studies on the Scholastic Debate and Its Reception in Early Modern Philosophy* (Leiden: Brill, 2001), 57–82.

[12] For this idea in Aristotle, see J. Annas, "Aristotle, Number and Time", *Philosophical Quarterly* 25 (1975), 97–113.

[13] Trifogli (2000), 223–230, also A. Maier, *Metaphysische Hintergründe der spätscholastichen Naturphilosophie* (Rome: Edizioni di storia e letteratura, 1955), 65–91.

[14] Thomas Aquinas, *Commentary on Aristotle's Physics*, trans. R. Sparth, R. Blackwell and W. E. Thirlkel (London: Routledge and Kegan Paul, 1963), 280. See Maier (1955), 69.

2 Time and Perception in the *De Anima* Tradition

I will focus on three specific ways in which late Aristotelian authors connected time and perception. Firstly, I want to discuss accounts of the relationship between time and the internal and external senses in the *De anima* commentary tradition. These accounts represented an attempt to flesh out the perceptual content of time beyond the brief discussions in commentaries on the *Physics* by identifying where, and how, the sense-perception of time might occur. They also represented a broader challenge to assumptions about the dominance of the intellect within accounts of how time relates to the soul. Secondly, I will examine the role that time and notions of temporal sequence played in sensation and sense-perception itself. Finally, I will consider the broader implications of discussions of the role of a "sense of time" (*sensus temporis*) in the human subject.

Attempts within the *De anima* commentary tradition to flesh out the sense-perceptual content of time took several forms, but the broad thrust in every case was to reconsider if the intellect is the dominant force in our awareness of time, and to ask whether the internal and external senses might also be involved. However, it is worth noting that these commentators placed limits on the role of the sensitive soul in time, and were unwilling to argue that time is perceived wholly by sense. I want to cite one example in particular here, from the 1622 treatise *De interiori sensu libri tres* by Juan de Guevara, a Spanish cleric from the Order of Friars Minor. Guevara's work was one of a number of late Aristotelian works on psychology, such as Fortunio Liceti's *De intellectu agente* (1627), which dealt with one particular aspect of the *De anima* tradition in a textbook format. Guevara's treatise shows the late Aristotelian concern with this aspect of the perception of time in a very clear way.

In a discussion of what he calls the perception of the predicates of quantity, (that is, magnitude and time), Guevara asked whether time can really be perceived by the internal senses. Since time is the number of motion, he argued, it "seems that it can by no means be perceived without the connection of those parts of motion, and with great reflection of the intellect."[15] As time consists of discrete past, present and future parts that we perceive as a continuum, our perception of it must involve connecting these parts. However, the role of the intellect in constructing time may be matched by that of the internal senses: "Nevertheless some add that perhaps if it is perceived, this is according to the reality that time has in common with motion. But although time is sensed together with motion, and is not experienced otherwise, nevertheless we judge. . .that it can be truly and properly perceived by the internal senses."[16] This is because in the case of magnitude, "that which is distinguished by sense, is not necessarily discerned according to every singular essential predicate,

[15] I. De Guevara, *De interiori sensu libri tres*, (Rome: Ex typographia Iacobi Mascardi, 1622), p. 52: "Cum igitur iuxta definitionem Aristotelis, tempus sit numerus motus secundum prius, & posterius, haud quaquam absque collatione ipsarum partium motus, & maxima reflexione intellectus, id percipi posse videtur."

[16] De Guevara, *De interiori sensu libri tres*, pp. 52–3: "Addunt tamen aliqui, si forte percipiatur, id esse secundum realitatem, quam tempus communem habet cum motu. Verum tempus licet simul

but it is enough that it should be known through something, or with regard to something."[17] This "something" is motion. Rather than being known in itself as a predicate or category, time can be sensed "through", or according to, motion. It is perceptible as an accident of continuous quantity. Time in this sense is the duration and extension of the parts of motion, "or the form, through which those parts are extended in order in a succession, not in a coexistence all at once, but one after another": therefore, time must be perceived together with those parts of motion.[18] Motion, Guevara argued, can be slow or fast, and its speed or tardiness is a form of duration. Therefore, sense perception of its speed or tardiness implies perception of the duration of its parts, and thus a perception of time.[19] So "sense is affected in diverse ways by motion, according to the diversity of extension of that thing which is called time."[20] This passage goes beyond the association of time with motion in the *Physics* commentaries, to explain how its sensitive component is perceived. Guevara presented a more detailed argument about the relation of time and motion to sense, which relied on a concept of time as the duration of motion as well as the more typically Aristotelian model of number. He argued that time may be perceived by the internal senses – or perhaps first by external sense-perception – insofar as it is a form of duration of the parts of motion. It is important to note that he used the verb *percipere*, "perceive", throughout his account.

Guevara also discussed the perception of time in terms of the category *quando*, or "when". He suggested that this category can be considered in two ways, either "distinctly and formally, according as it is a form or duration by which things are constituted in a space of imaginary time" or "confusedly, or materially together with the thing that endures, according as it endures more or less, former or latter."[21] In the former sense, in which time is seen as a duration located within a broader tract of imaginary time, "it can in no way be perceived by sense."[22] Whilst time conceived of as "the extension of the parts of motion and a species of quantity"

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cum motu sentiri, & non aliter experiatur, vere tamen, ac proprie a sensu interiori percipi posse existimamus cum Aristotele 4 Physic tex 98 & de memor & reminis cap 1 & 2."

[17] De Guevara, *De interiori sensu libri tres*, p. 53: "Ut enim de magnitudine dicebamus: quod sensu dignoscitur, necesse non est secundum omnia, & singula praedicata essentialia discerni, sed sufficit, ut per aliquid, vel secundum aliquid innotescat."

[18] De Guevara, *De interiori sensu libri tres*, p. 53: "Cum igitur tempus sit vera duratio, & extensio partium motus, seu forma, per quam ipsae partes extenduntur in ordine ad successionem ad non coexistendum simul, sed una post aliam: negari non potest, ipsum percipi simul cum eisdem partibus motus."

[19] De Guevara, *De interiori sensu libri tres*, p. 53.

[20] De Guevara, *De interiori sensu libri tres*, p. 53: "Ratio vero a priori est, quia diversimode immutatur sensus a motu, iuxta diversitatem extensionis illius, quae dicitur tempus."

[21] De Guevara, *De interiori sensu libri tres*, pp. 62–3.

[22] De Guevara, *De interiori sensu libri tres*, p. 62: "Nam si sumatur distincte, ac formaliter, prout est forma, seu duratio, qua res constituuntur in hoc, aut illo spatio temporis imaginarii; nulli dubium est, ipsum Quando, sensum omnem penitus praeterire. Nam licet tempus, prout est extensio partium motus, ac species quantitatis, aliquo modo percipiatur a sensu, tamen prout est duratio eiusdem motus, qua ille constituitur in hac aut illa differentia temporis imaginarii, nullo modo percipi potest."

can "be perceived in some way by sense", time as duration cannot be.[23] This is because time conceived of as a duration involves both the concepts of its former and latter parts, and the connection and apprehension of these parts, which involves the intellect. Guevara implied that both the apprehension of duration and an awareness of its location within the broader span of imaginary time require the operation of the intellect. Therefore the perception of time as a distinct and formal category does not depend on sense-perception.

However, if the category *quando* is taken "confusedly and materially" – that is, if time is directly associated with a thing that endures in time – it can be associated with sense-perception. Associating time with an enduring thing relates it to the length or shortness of its duration, and to its greater or lesser magnitude, "and with the material order of its parts, according as the first are distant from the last, not indeed by comparing the magnitude and its parts one with another, but only by apprehending those parts alone in different ways."[24] Taken in this sense, "the cognition of that quando is not to be denied to sense."[25] That is, it is related both to internal and external sense. Guevara argued that "sensitive apprehension" (which he sees as involving both perception by the external senses and the processing of sensory representations by the internal senses) can represent a day and an hour in different ways, just as it apprehends the past, present and future differently. This is the source, he suggested, of the link made by Aristotle (in *De memoria et reminiscentia* 449b25-30) between the present and sense, the future and hope, and the past and memory.[26] Further evidence that sense-perception can apprehend time in a confused way is provided by the phenomenon of animal time-awareness. Animals do not possess a rational soul, and therefore cannot be aware of time through the operation of the intellect. However, Guevara cited several standard examples of apes, ants and other animals who "know" the proper time to store food, and when to sleep. These accounts of animals may not prove that time can be apprehended by sense directly; however they do show that "those permanent things are conceived of as coexisting with the motions themselves, with which they are apprehended to endure materially, and confusedly, as through a day, or an hour, which is to perceive duration confusedly."[27] Sense-perception of time in terms of the predicate *Quando* may be imperfect and confused in comparison to its proper and formal intellection, but it is nevertheless possible.

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[23] De Guevara, *De interiori sensu libri tres*, p. 62.

[24] De Guevara, *De interiori sensu libri tres*, p. 63: "Si vero ipsum Quando sumatur confuse, & materialiter simul cum re durante, prout magis, vel minus durat, prius, aut posterius: eo modo quo percipitur magnitudo, magis vel minus extensa, & cum ordine materiali suarum partium, prout primae distant ab ultimis, non quippe conferendo magnitudinem, aut partes illius unam cum altera, sed diversimode tantum illas appraehendendo."

[25] De Guevara, *De interiori sensu libri tres*, p. 63.

[26] De Guevara, *De interiori sensu libri tres*, p. 63.

[27] De Guevara, *De interiori sensu libri tres*, p. 63: "Quae licet immediate non arguant, nisi cognitionem temporis extrinseci respectu rerum permanentium: nihilominus convincunt, etiam ipsas res permanentes concipi tanquam coexistentes cum ipsis motibus, cum quibus materialiter, & in confuso appraehenduntur durare, ut per diem, aut horam, quod est confuse percipere durationem."

Guevara's discussion of the sense-perception of time is interesting because of its sustained and extended nature. It demonstrates that the possibility that time might be perceived by sense was taken seriously by late Aristotelian authors. It does not attempt to replace the traditional model in which the intellect is the chief faculty through which time is perceived, but it does present a deeper and more diverse account. His examination of the possibility of sense-awareness of time should be read in the context of attempts in the Aristotelian tradition to expand the role played by other mental faculties in our awareness of time. These include the emphasis placed by textbook authors such as Clemens Timpler and Eustachius a Sancto Paulo on the role of the imagination in time; for them, the concept of imaginary time is really *imagined*, or created by the mind. Timpler argued that imaginary time "is that which is made only by the thought of the mind, and is nothing beyond that."[28] It is wholly mental and fictional, has only "imaginary essence and existence", and is thus a rational being.[29] In a similar way, Eustachius suggested that "when we conceive of time, we do not imagine (*imaginamur)* motion, but the duration of that motion": he pays little attention to the conventional link between time and the intellect, using the verb *imaginere* throughout to denote the soul's relationship with time.[30] Late Aristotelian authors also considered the role played by other internal senses in time-perception. The Coimbra *De anima* commentary, for example, argued against Themistius that we can form an image of time itself through *phantasia.*[31] The German professor Otto Casmann's discussion of *phantasia* also distinguished *phantasmata* or *idola* according to the part of time that they represent.[32] These accounts shared a common agenda: to expand the role attributed to the non-rational faculties in our awareness of time. This is an agenda that should be understood within the often surprisingly innovative culture of the late Aristotelian commentary and textbook tradition, and which has implications beyond the connection between time and perception.

The second connection between time and perception that I want to discuss concerns the role of time and notions of temporal sequence in the process of sense-perception itself. Sensation and the sensitive soul were intimately connected

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[28] C. Timpler, *Metaphysicae systema methodicum libri quinque*, (Hanover: Apud Guilielmum Antonium, 1606), p. 53: "Tempus imaginarium est quod sola mentis cogitatione fingitur, & extra eam nihil est."

[29] Timpler, *Metaphysicae systema methodicum libri quinque*, p. 68.

[30] E. Sancto Paulo, *Summa philosophiae quadripartita, de rebus dialeticis, ethicis, physicis & metaphysicis*, (Cambridge: Ex officina Rogeri Danielis, 1649), p.159: "dum vero tempus concipimus, imaginamur non motum, sed ipsius motus durationem."

[31] Collegium Conimbricense, *Commentarii collegii conimbricensis societatis iesu, in tres libros de anima Aristotelis stagiritae*, 4th ed. (Cologne: Sumptibus Haeredum Lazari Zetzneri, 1629), col. 446: "Theophilus tamen hoc in lib. ad tex.22. ait phantasiam non percipere tempus ipsum, nec rationem praeteriti in se, sed res, quae praeterito fuerunt tempore, idemque videtur existimasse Themistius: sed nobis contrarium magis placet, praesertim si de phantasia humana sermo sit, de qua in conclusione loquimur."

[32] O. Casmann, *Psychologia anthropologia, sive animae humanae doctrina*, (Hanover: Apud Guilielmum Antonium, 1594), p. 371: "Idola autem illa sunt vel a rebus prasentibus, vel praeteritis concepta, vel a futuris etiam praeconcepta & praevisa."

to time and objects in time in Aristotelian psychology, because the external and internal senses perceive and process particular sense impressions before the atemporal agent intellect abstracts them from time, place and other material conditions. Sense-perception in Aristotelian psychology deals with objects in time, but according to many commentaries it is also structured according to time: the Coimbra *De anima* commentary, for example, suggested that sense has a linear, temporal structure which is opposed to the circular or atemporal structure of the intellect.[33]

Many early modern Aristotelians addressed the question of how sense-perception operates in time: that is, of how the soul perceives its temporal objects. They discussed whether sensation occurs in time, and whether it is structured according to a temporal sequence. These debates centred on the issue of whether the external senses and the common sense perceive several sensible objects at the same time, or whether sense-perception occurs consecutively. Generally, the role of the common-sense as a clearinghouse of sense-impressions from the external senses, combined with its role in comparing different sense-impressions, means that it must receive several sense-impressions concurrently, whereas the external senses perceive only one sensible at a time. The German physician and natural philosopher Johannes Magirus, for example, argued that the common sense judges and discriminates between different sense-impressions "many together at the same time, that it takes from those senses."[34] Magirus more or less represented the late Aristotelian consensus about time and the operation of the common sense in assuming that, in one instant of time, several sensible species may be processed by the common sense.

However, as Hieronymus Dandinus argued in his *De corpore animato libri septem* (1610), the position concerning the external senses was less clear.[35] Dandinus (or Dandini) taught philosophy and theology at Paris and Padua, and later served as the rector of various Jesuit colleges across Italy. Although in some respects (such as the structure of his commentary and his strong interest in anatomy and medical knowledge) Dandinus is an untypical Jesuit Aristotelian, his *De anima* commentary shows many of the themes discussed here in a very clear way. Dandinus suggested that the external senses cannot perceive several distinct sensibles either at once or successively if they relate to more than one sense, because each sense is limited to

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[33] Conimbricense, *Commentarii collegii conimbricensis societatis iesu, in tres libros de anima Aristotelis stagiritae*, cols. 409–410.

[34] J. Magirus, *Anthropologia, hoc est commentarius eruditissimus in aurem Philippi Melanchthonis libellum de Anima*, (Frankfurt: Wolfgang Richter, 1603), p. 486: "Utitur ergo sensus Communis reliquis omnibus sensibus tanquam ministris satellitibus; atque hoc sensuum ministerio fretus sentit ille, iudicat & discernit species sensiles: & plures quoque simul uno & eodem tempore, quas arripit ab iis sensibus."

[35] H. Dandinus, *De corpore animato libri VII, luculentus in Aristotelis tres de anima libros, commentarius peripateticus*, (Paris: Apud Claudium Chappeletum, 1610), col. 1221: "Iam de numero unum illud disputetur, an multa sensilia simul possint uno sensu sentiri. Facilis esset responsio, si de interiori sensu loqueremur; quem plurimum exteriorum obiecta simul cognoscere constat, dum ea comparat, & separat unumquodque. At de exteriore dicendum". Toletus also makes this point; F. Toletus, *Commentaria una cum quaestionibus in Aristotelis libros de anima*, (Coloniae Agrippinae: In officina Birckmannica, 1583), p. 118^{v}.

its proper object.[36] However, one sense can perceive more than one proper sensible at the same time, if it is comparing two sensibles, for example.[37] Experience shows, for instance, that "[hearing] distinguishes and hears many men and many sounds in a musical concert."[38] Dandinus related the ability of external sense to perceive several sensibles at once to the intellect's ability "to understand both form and matter, as they make a union."[39] However, the ability of the intellect to understand two components of an object together depends on *phantasia*, "which cannot form an image of things together unless they are one [that is, unless they are a unity, like matter and form]."[40] Although the external senses might be moved by several present objects at once, and produce several actions and passions in the organs of sensation, these several concurrent impressions are subsumed under one act of sense-cognition and judgement.[41] Dandinus distinguished between the multiplicity of concurrent sense-data, and the single act of sensation that results from them. He also argued that, although the external senses are capable of processing several sensibles at once, the impressions produced will be less perfect than if a single sensible were perceived in the same time.[42] Dandinus' discussion stressed the notion of time as a structuring element in analysing sensation: by considering its concurrent operations, he argued, we necessarily consider the moment of time in which they occur. In this case, he seems to contrast this notion of a moment in time with a kind of temporal sequence, distinguishing between the perception of sensibles "together" or "in one moment of time" (*simul*) and "successively" (*successive*).

This account of how sense-perception occurs in time, or involves a temporal sequence, must be set against the sustained attack mounted by Jacopo Zabarella in his posthumous *De anima* commentary (parts of which appeared in his *De rebus*

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[36] Dandinus, *De corpore animato libri VII, luculentus in Aristotelis tres de anima libros, commentarius peripateticus*, col. 1221: "Is nec simul nec successive plura cognoscit obiecta, quae ad diversos sensus pertineant. Unius enim est determinati obiecti proprii."

[37] Dandinus, *De corpore animato libri VII, luculentus in Aristotelis tres de anima libros, commentarius peripateticus*, col. 1221: "Potest tamen plura sua simul percipere, ut ea faciunt unum simulque movent sensum. Aspectus, dum album a nigro distinguit, utrumque simul cognoscit."

[38] Dandinus, *De corpore animato libri VII, luculentus in Aristotelis tres de anima libros, commentarius peripateticus*, col. 1221: "Multos homines simul videt, & auditus multos audit sonos in concentu musico, aut multorum clamore, & c."

[39] Dandinus, *De corpore animato libri VII, luculentus in Aristotelis tres de anima libros, commentarius peripateticus*, col. 1221: "Intellectus quoque simul materiam & formam intelligit, ut unum faciunt coniunctum; & enuntiatio subiecto constat & attributo; ut alia plura taceam."

[40] Dandinus, *De corpore animato libri VII, luculentus in Aristotelis tres de anima libros, commentarius peripateticus*, col. 1221: "Tametsi a phantasia is pendeat; quae simul formare nequit nisi unum."

[41] Dandinus, *De corpore animato libri VII, luculentus in Aristotelis tres de anima libros, commentarius peripateticus*, col. 1221: "Exterior autem sensus a pluribus obiectis praesentibus simul movetur. Ut quamvis plures sint obiectorum actiones in sensum, atque adeo plures in eius organo susceptiones ac passiones: illas tamen unica sequitur cognitio sensus, unicum de omnibus iudicium."

[42] Dandinus, *De corpore animato libri VII, luculentus in Aristotelis tres de anima libros, commentarius peripateticus*, col. 1221: "Minus tamen perfecte ac distincte singula internoscit, quam si seorsim singula percepisset. Pluribus quippe intentus minor est ad singula sensus."

naturalibus). Zabarella divided the process of sensation into three distinct parts, or "instants", which are "ordered and distinct, if not in time, at least by nature."[43] Zabarella's use of the Latin term *instantia* here suggests not only the notion of an instant, or moment in time, but also that of endurance or perseverance in time. The first stage of the process of perception involves the reception of species in the organ of sense, by the action of the material object, the second is a kind of judgement, and the third the reception of this judgement "*in toto composito*" by the animated organ.[44] The first instant can precede the others in time, but the second cannot precede the third instant in time, only "by nature". This is because "vision is at once a judgement or action of the soul, and a passion of the animated eye, (just) as the form of an element is at the same time a mover insofar as it is a form, and a moved thing insofar as it is matter; so that the action belongs solely to the soul, whereas the passion is not only of the soul but of the animated organ."[45] Thus for Zabarella, the nature of sensation was not wholly temporal, or rather, it did not follow a strict temporal sequence.

These debates about the temporality of sensation also related to contemporary discussions of the temporality of thought and cognition. Zabarella and the many central and northern European Aristotelians influenced by him, such as Johannes Magirus, denied that intellection involves any move from former to latter, or any concept of time. It is true that the question of the temporality of sensation was not fully developed in these authors. Nevertheless, for the present we may note that discussions of whether, and how, sense-perception occurs in time added an extra dynamic between internal and external to the elements of internality and externality already present in the concept of time – for if time is perceived in some way by sense, this perception also occurs in a faculty that itself operates in time.

The third connection between time and perception that I want to highlight in some respects draws together the themes already discussed. It appears in commentaries on the *De anima* and concerns what is termed a "sense of time" (*sensus temporis*). The relevant passage here is *De anima* III.6, 433b 5–10, where Aristotle suggests that

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[43] J. Zabarella, *Commentarii. . .in III Aristotelis libros de anima*, (Frankfurt: Sumptibus Lazari Zetzneri, 1606), col. 529: "Ex his omnibus colligimus tria haec in sensione notanda esse, quae Latini tria instantia appellarunt, ordinata, atque distincta, si non tempore, saltem natura".

[44] Zabarella, *Commentarii. . .in III Aristotelis libros de anima*, col. 529: ". . .primum enim ab actione obiecti materialis sit in organo receptio speciei, ut coloris in oculo; secundo anima iudicium profert, & ita agere dicitur: tertio recipitur iudicium in toto composito, nempe organo animato, & ita anima tanquam eius pars dicitur pati. . .."

[45] Zabarella, *Commentarii. . .in III Aristotelis libros de anima*, col. 527: " primum quidem instans potest etiam tempore praecedere reliqua, ut diximus de illo, qui res praesentes non animadvertit, potest etiam non praecedere tempore, sed solum natura, at secundum non potest praecedere tertium tempore, sed natura tantum praecedit, quia visio est simul iudicatio, seu actio animae, & receptio oculi animati, quemadmodum simul tempore forma elementi est movens quatenus est forma, & mota quatenus est in materia, ita ut agere sit solius animae, pati autem non solius, sed organi animati. . .."

> appetites may conflict, and this happens wherever reason and desire are opposed, and this occurs in creatures which have a sense of time (for the mind advises us to resist with a view to the future while desire only looks to the present: for what is momentarily pleasant seems to be absolutely pleasant and absolutely good, because desire cannot look to the future)

Here, Aristotle presents an account of the temporality of motivation in which temporal awareness (the "sense of time") allows man to delay or reject immediate sensual gratification in favour of future reward. A conflict between appetites occurs in animals aware of time because their temporal awareness produces this rejection. Late Renaissance commentators were interested in this passage as an account of the conflict between the rational appetite, or will, and the sensitive appetites, the passions or desire, but also as an argument about what constitutes an awareness, or "sense" of time, and who might possess this awareness.

Some commentators, such as Johannes Baptista Rubeus, did not really proceed beyond the argument that man, who alone possesses a rational soul, is the only creature with a real sense of time.[46] For other authors, there was an obvious Christian moral overtone to this passage, in that the human intellect ultimately considers future damnation over present sensual pleasure.[47] Augustinus Faba gave a typical reading of this kind in his *De anima* commentary, arguing that Aristotle,

> teaches that the aforementioned appetites are in conflict amongst themselves on account of time: for example, the intellect knows it to be evil for a married man to have relations with other women, on account that a grave sin is committed, and knows that he will suffer punishment after death, on account of his sin. And then the intellectual appetite commands the man that he should relinquish the other women, knowing of the future detriment: but sense, which does not perceive future time, and only judges present things, commands the man to have relations with other women.[48]

However, other commentators suggested that this passage is more complicated than it first appears. Many of the issues raised by Guevara about the respective roles of the intellect and the sensitive soul in time-perception resurface in these discussions. The notion of a "sense" of time is particularly important here. Some commentators, such as the Italian humanist Antonio Scaynus (1524–1612), devoted much space to glossing this term: "those who have a sense of time" Scaynus argued, are "those who

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[46] J. B. Rubeus, *Commentaria dilucida in tres libros Aristotelis de anima* (Venice: Apud Ioannem Guerilium, 1602), p. 80.

[47] Toletus, *Commentaria una cum quaestionibus in Aristotelis libros de anima*, p.172^{v} and A. Polus, *Novum veritatis lumen in tres libros Aristotelis de anima* (Venice: 1578), p. 264.

[48] A. Faba, *In tres Aristotelis libros de anima praeclarissima commentaria*, (Seville: Apud Virgilium de Zagrandis, 1596), cols. 812–3: "Docet praedictos appetitus esse inter se contrarios propter tempus: nam (exempli gratia) intellectus cognoscit malum esse, virum nuptum cum aliis mulieribus rem habere, ob grave quod committitur peccatum, & scit se passurum poenas post mortem, eius peccati causa. Tuncque appetitus intellectivus praecipit homini ut reliquas mulieres relinquat, praecognito futuro detrimento: sed sensus, qui futurum tempus non percipit, & solum de praesentibus iudicat, praecipit homini ut cum aliis mulieribus rem habeat."

know (*cognoscunt*) time, and consider it according to present, past and future."[49] Scaynus attempted to clarify the ambiguity inherent in the idea of a "sense" of time, which he suggested must really depend on the intellect, according to Aristotle. He suggested that the phrase "*in those which have a sense of time*, neither means that man senses time, since we do not see it, and neither therefore do we imagine it."[50] Rather, "by *sense*, it is to be understood from Aristotle the awareness (*notitia*) that is had of time."[51] Scaynus ultimately read the idea of a "sense of time" as a cognitive appreciation of time, which is directed by reason, but he also considers the idea that we may actually *sense* time as worthy of consideration. Scaynus worked within the framework outlined in most contemporary *Physics* commentaries by rejecting the argument that time is a purely psychological entity, but nevertheless he expanded their frame of reference by considering the role of sensation in time. However, other authors went even beyond this to meditate more deeply on the role of sense in time perception, and on the implications of a "sense of time", interpreted as a sensitive awareness or apprehension of time, for man and other animals.

Hieronymus Dandinus's *De corpore animato* contains one of the most detailed treatments of the "sense of time" passage in the contemporary Aristotelian tradition. Dandinus followed a similar line of argument to Scaynus in several respects, suggesting that this passage contains two "grave difficulties": firstly, "whether only man has a sense of time" and secondly whether he alone is moved by contrary appetites.[52] The first difficulty is the most relevant here. According to Dandinus, time is the duration of motion, and thus "must surely exist in the thing itself no less than motion, and nor does it need to exist by the thought or supposition of the soul, just as the other species of duration, eternity and aevum, do not."[53] Dandinus argued that numbering the successive parts of motion into time must be a work of the intellect alone, although the number itself depends on the motion that is numbered.[54] The intellect's role in numbering motion is crucially important both

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[49] A. Scaynus, *Paraphrasis. . .cum adnotationibus in libros Aristotelis de anima. . .* (Venice: 1599), p. 144: "Fit inquit bellum hoc inter contrarias appetitiones apud eos, qui habent temporis sensum; qui cognoscunt tempus, & illud meditantur secundum praesens, praeteritum & futurum."

[50] Scaynus, *Paraphrasis. . .cum adnotationibus in libros Aristotelis de anima. . .*, p. 144: ". . .in his quae habent sensum temporis, censet quod neque homo sentiat tempus, quoniam ipsum non videmus, ergo neque imaginamur."

[51] Scaynus, *Paraphrasis. . .cum adnotationibus in libros Aristotelis de anima. . .*, p. 144: "Dicendum ex adverso per sensum, intelligi ab Aristotele notitiam, qua habetur de tempore."

[52] Dandinus, *De corpore animato libri VII, luculentus in Aristotelis tres de anima libros, commentarius peripateticus*, col. 2188.

[53] Dandinus, *De corpore animato libri VII, luculentus in Aristotelis tres de anima libros, commentarius peripateticus*, col. 2189: "Verum si tempus durationem motus significat, ea sane non minus, quam motus, in rebus ipsis existit; neque animae cogitatione aut supputatione opus habet, sicut nec caeterae durationis species, aeternitas, & aevum."

[54] Dandinus, *De corpore animato libri VII, luculentus in Aristotelis tres de anima libros, commentarius peripateticus*, col. 2189.

to arguments about the reality of time, and to Dandinus' discussion of the intellect's role in time-perception.

However, like Scaynus, Dandinus also addressed the problem of animals' apparent awareness of time. For, he argued, "Surely not only man, but also very many beasts lacking intellect and reason have a sense of time. . .."[55] Animals had no rational soul in Aristotelian psychology, but, as we have seen from Guevara's account, it was commonly recognized from anecdotal evidence, or "experience", that they were aware of time. Dandinus relied particularly on the Greek commentator Philoponus' account to distinguish between the imperfect awareness of time attributed to animals, and the perfect numbering of motion practised by man. He argued that animals firstly "do not apprehend time, but those things that are in time, such as cold or heat, the one of winter and the other of summer."[56] He suggested that the incorporeal nature of time makes it inaccessible to sense and *phantasia*, which concern corporeal and sensible things.[57] The human intellect is the only power capable of numbering and distinguishing time definitely, so only man has what might be called a definite sense of time. However, for Dandinus, this did not imply that only man can have a sense of time.[58] Rather, he followed Themistius in arguing that appetites conflict in those animals with a sense of time, "and in man most powerfully." Following from his earlier distinction between the incorporeal nature of time and the corporeal and sensible objects located in time, Dandinus argued that man "senses time in itself", whereas animals sense it "from its accidents", since they "do not properly have a sense of time itself, but of that motion and passion which they have at some time undergone."[59] Animals clearly recognize motion, which is the substrate of time, but they lack the higher cognitive power to number that motion as time. Whether their awareness of objects and motions in time constitutes a knowledge of the accidents of time is unclear, however, given that time itself is an accident of motion.

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[55] Dandinus, *De corpore animato libri VII, luculentus in Aristotelis tres de anima libros, commentarius peripateticus*, col. 2188: "Sane non solum hominem, sed bestias quoque plerasque intellectu & ratione carentes temporis sensum habere. . .."

[56] Dandinus, *De corpore animato libri VII, luculentus in Aristotelis tres de anima libros, commentarius peripateticus*, col. 2189: "Primum, eas non appraehendere tempus, sed ea, quae sunt in tempore, ut frigus aut calorem, illud hyemis, hunc aestatis."

[57] Dandinus, *De corpore animato libri VII, luculentus in Aristotelis tres de anima libros, commentarius peripateticus*, col. 2189: "Incorporeum enim quidpiam est tempus, quod sensum & phantasiam, quae corporea tantum & sensilia compraehendunt, effugiat."

[58] Dandinus, *De corpore animato libri VII, luculentus in Aristotelis tres de anima libros, commentarius peripateticus*, col. 2189: "Ego tamen hoc loco non audio solum hominem affirmari temporis sensum habere. . .."

[59] Dandinus, *De corpore animato libri VII, luculentus in Aristotelis tres de anima libros, commentarius peripateticus*, col. 2189: "Is enim per se tempus sentit, caetera ex accidenti, utpote quae non ipsius temporis sensum proprie habeant, sed motionis & passionis eius, quam tempore aliquo acceperunt."

Dandinus' discussion of animals' awareness of time should be read within the broader context of contemporary Aristotelian debates about their mental capacities.[60] Early modern commentators on the *De anima* and *De memoria et reminiscentia* frequently questioned whether animals possess reason or imagination. The common consensus was that, although reason is unique to man, many higher animals, and particularly those classified as *bruta*, may through natural instinct exhibit certain rational characteristics. Franciscus Toletus, for example, questioned whether animal prudence represents a kind of reason in the sensitive part of the soul.[61] The power of *aestimativa*, or estimation, by which animals recognise enemies and friends, is another example of this sub-rational cognitive ability. All of the late Renaissance commentators who discussed the mental powers of animals faced the problem of reconciling certain aspects of animal behaviour, drawn from experience or from textual authority, with their sub-rational status. Their response in discussions of animal prudence or estimation was often to argue that this behaviour can only ever resemble or imitate human behaviour. The *De anima* passage concerning the appetites and a sense of time is a good example of this, for although many classical commentators, and indeed common experience, suggested that animals are aware of time in some way, the strong Aristotelian association between the intellect and time seemed to make this impossible.

These discussions of the human "sense of time" represented the culmination of the late Aristotelian examination of the complex relationship between time and perception. Accounts of animal's perceptual awareness of time challenged the traditional dominance of the intellect by demonstrating by example that sense alone can, in a way, perceive time. But they also pointed to the underlying thrust of debates about time and perceptual awareness. What was at stake here was the possession of a kind of temporal awareness, seen not only as the ability to perceive time, but also as a capacity for the subject to orient itself in time. This capacity involved the soul's ability to engage with temporal objects, and also to exist temporally and position itself in time. This is an important and neglected aspect of the late Aristotelian conception of being in the world. In many respects, the late Aristotelian tradition adopted more complex and sophisticated approaches to time and perception than were found in the "new" philosophy that followed. These approaches have a resonance beyond accounts of perception itself, a resonance that extends towards theories of the soul and the subject, and of how they exist and operate in time.

Acknowledgments I would like to thank Annabel Brett for her perceptive comments on an earlier version of this chapter.

[60] On Aristotelian and other debates about animals' capacity for language and reason, see R.W. Serjeantson, "The Passions and Animal Language, 1540–1700", *Journal of the History of Ideas*, 62 (2001), 425–444.

[61] Toletus, *Commentaria una cum quaestionibus in Aristotelis libros de anima*, pp. 127^{r}–128^{v}.

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Malebranche's Ontological Problem of the Perception of Bodies

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The inaccuracy of Nicolas Malebranche's doctrine of the nature of sense perception in *De la Recherche de la vérité/The Search after Truth* (1674–1675)[1] is the target of reiterated demonstrations by Antoine Arnauld, first in his treatise *Des vraies et des fausses idées/On True and False Ideas* (1683),[2] and then in his *Défense contre la Réponse au livre des Vraies et des fausses idées* (1684), as well as in some letters to Pierre Nicole (1684) or Malebranche himself (1685 and 1694).[3] Bayle is known as the first reader of these polemical works to have noticed that the puzzles urged in Arnauld's *On True and False Ideas*, against the Malebranchian thesis of the foundation of objective knowledge in God's ideas of external things, are arguments that can be raised against the Cartesian assumption that the ideas providing us knowledge of external objects are nothing other than modalities of the soul.[4] No matter whether

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[1] All further references to Malebranche's *De la Recherche de la vérité* are to the edition by Geneviève Rodis-Lewis (Paris: Vrin, CNRS), Vol. I for Books I–III (1972, 2nd ed.), vol. II for Books IV–VI (1974, 2nd ed.); the references to the *Eclaircissements sur la Recherche de la vérité* are to Vol. III (1976, 2nd ed.) of this edition. I refer at the same time to *The Search after Truth*, translated and edited by T. M. Lennon and P. J. Olscamp and the *Elucidations of The Search after Truth* trans. and ed. T. M. Lennon (Cambridge: Cambridge University Press, 1997). I use the abbreviations *Search* and *Elucidations* and though I quote the English translation, I always indicate first the pagination in the Rodis-Lewis edition and second the pagination in the Lennon-Olscamp translation. Since I explore Arnauld's demonstration of the flaws in Malebranche's doctrine of sense perception, I am only interested with the content of *The Search after Truth* before the changes resulting from the confrontation with Arnauld's arguments. Thus, my quotations from Malebranche are not taken from the final text (1712) of *The Search after Truth* and of the *Elucidations* (the one translated in the CUP volume), but from its fourth edition (1678, one volume in 4°), that is the one Arnauld refers to. In what follows, the translations of all variations (as they are indicated in footnotes by G. Rodis-Lewis) are my own and I signal them by the use of italics.

[2] For references to this treatise, I use *On True and False Ideas*, translated with an introduction by E. J. Kremer (Lewinston, NY: The Edwin Mellen Press, 1990).

[3] Arnauld's *Des vraies et des fausses idées* and *Défense contre la Réponse au livre des Vraies et des fausses idées* are contained in Vol. 38 of the *Œuvres de Messire Antoine Arnauld* (Paris-Lausanne, 1775–1783). His letters to Nicole and Malebranche are contained in Vols. 39 and 40.

[4] See Pierre Bayle, *Nouvelles de la République des Lettres*, april 1684, article II, *Œuvres diverses* I, ed. E. Labrousse, (Hildesheim: Olms, 1964), 25–7. Thomas Reid approves of such a reading:

S. Knuuttila, P. Kärkkäinen (eds.), *Theories of Perception in Medieval and Early Modern Philosophy,*

the ideas are in God or in the soul, objective knowledge is made impossible by the substitution of ideas for external things as the *terminus ad quem* of knowledge. Instead of taking the Arnauld-Malebranche discussion as proving that the two protagonists are caught in a vicious circle of a mutually "unanswerable"[5] argument, I think that the examination of the charges brought by Arnauld against *The Search after Truth* has to take a new start. It seems to me that the very opposition between an extramental (Malebranche) and a mental (Arnauld in the name of Descartes) representationality of ideas ought to be analyzed by focusing on the metaphysical coherence of the Malebranchian topic. According to *On True and False Ideas*, this coherence is unattainable, because Malebranche misunderstands the essence of thought. It is impossible, from Arnauld's standpoint, to mean by the general notion of idea "whatever the mind perceives immediately" – be this immediate perception the representation of an external object or of a sensory experience – and to restrain the general notion of the modification of the mind, merely to representations of the inner experiences of the mind. These remarks are based on a passage in book I of Malebranche's *The Search*.[6] The incoherence is, in Arnauld's view, both logical and metaphysical. It is logical, because the definition of idea ("whatever the mind perceives immediately") implies that idea is the same as perception; the subsequent restriction of the modification of the mind to the idea that represents a sensory experience results in a contradiction. Indeed, a perception is necessarily a modification of the percipient mind, and thence the idea representative of an external object is and is not a perception at the same time. It is a perception, since it is an idea, but it is not a perception, since it is not a modification of the mind. The incoherence is furthermore metaphysical, since the contradiction denounced by Arnauld shows that the alleged division of ideas (ideas representative of external objects and ideas representative of sensory experiences) in *The Search after Truth* conceals a reversal of the ontology of ideas in Descartes' *Meditationes*. By denying the idea representing an external object the status of a modification of the mind, Malebranche dissociates the mode of being of an idea from that of perception. An idea is no more a modality of the soul. The problem for Arnauld is not that Malebranche disowns Descartes' authority, but that he misses the intrinsic representationality of the modalities of the soul, in other words, that he is ontologically wasteful and uneconomical. But one might turn the tables and say that, according to Malebranche, the statement that every thought is by itself representative of something (and thus, in the strict Cartesian sense, ideal) is the slogan of an impoverished metaphysics. My aim in this paper is to argue that in his work *The Search after Truth* Malebranche is not an awkward reader of Descartes, as Arnauld tends to portray him. In my view, his position with regard to perceptual

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see his *Essays on the Intellectual Powers of Man*, II, VII (*Philosophical Works, with notes and supplementary dissertations by Sir William Hamilton* I, ed. H. M. Bracken (Hildesheim: Olms, 1967), 266–267.

[5] I borrow this term from Reid, *Essays,* ed. Bracken, 266.

[6] This passage was suppressed in the last edition. See *Search*, 1.1, § I, ed. Rodis-Lewis, 42 note b. The quotation by Arnauld is found in *On True and False Ideas*, Ch. III, 9.

acquaintance is rather a purposeful correction of Descartes' insufficient interest in ontology when "the nature of ideas"[7] is at stake.

1 The Malebranchian Problem of the Immediate Imperceptibility of Material Things

The postulate asserted by Malebranche in the opening lines of the second part of the third book of *The Search after Truth* – "we do not perceive objects external to us by themselves"[8] – might be considered indeed as the banner of the opponents to direct realism, that is to say, to the thesis that external things are directly perceived, without the mediation and intervention of any added entities. In this passage, Malebranche deems that it is a truth granted by everybody that material things are *per se* imperceptible, inasmuch as the external bodies the mind perceives cannot be the *immediate* objects of its perceptions. Why cannot external bodies be at the same time *external* and *immediate* objects of perception? Why is their externality incompatible with the immediacy of our perceiving them? The perceptibility of external things "by themselves" would require, according to Malebranche, that these things be *united to* the perceiving mind or be in close contact with it.[9] If they were "intimately joined to the soul", external objects would necessarily be immediate objects of perception, but two reasons make this intimacy impossible: material things cannot unite themselves with the immaterial soul so that it may perceive them,[10] nor can the soul wander outside the body in order to unite with distant things.[11] In both cases, the difficulty has to be considered as ontological. As far as the first reason is concerned, Malebranche's argument rests upon the Cartesian thesis that the essence of mind consists only in thought and similarly the essence of matter consists only in extension: modifications depending on thought and modifications depending on extension are consequently incommunicable properties.[12] The other reason, why

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[7] The whole second part of the *Search*'s third book bears this title. See 413/217.

[8] *Search* 3.2.1, § I, 413/217. The first edition was even more explicit: "we do not perceive *things* external to us by themselves, *but only by the ideas we have of them*" (see Rodis-Lewis' note c). The word "things" was replaced with the word "objects" only in the fourth edition (see the same note).

[9] See *Search* 3.2.1, § I, 413/217: "our mind's immediate object when it sees the sun, for example, is not the sun, but something that is intimately joined [*unie*] to our soul, and this is what I call an *idea* [Malebranche's italics]"; 415/218: "But as for things outside the soul, we can perceive them only by means of ideas, given that these things cannot be intimately joined [*unies*] to the soul."

[10] *Search* 3.2.1, § I, 417/219: "material things [. . .] certainly cannot be joined [*s'unir*] to our soul in the way necessary for it to perceive them." Malebranche does use the terms "mind" and "soul" as interchangeable terms: the equivalence was sometimes literal in the first edition (see *Search*, 1.1, § I, 40 note h, "the mind *or soul* of man").

[11] *Search*, 3.2.1, § I, 417/219: "our souls do not leave the body to measure the heavens."

[12] See *Search*, 3.2.1, § I, 417 note d/219: "with [material things] extended and the soul unextended, there is no *proportion* between them."

the contiguity required by immediacy is lacking in the perception of external things, is not related to the disproportion or incommensurability between extended beings and the non-extended soul, but rather to an impossibility deduced from the union of the soul and the body. External things that are not close to us cannot be immediate objects of perception, because their being so would imply the presence of the soul in the same place as them. The perception of these external objects "by themselves" would mean a constant externalization of the mind, an unceasing disunion between the soul and the body, enabling the soul's location to be everywhere a thing is, so as to perceive it. This peregrine soul, taking a walk out of the body, does not give a plausible explanation of perception.[13]

Something astonishing is involved in the way the third book of *The Search after Truth* emphasizes the ontological impossibilities that issue from the epistemic problem of how the mind can perceive any external body. In fact, Malebranche states, in the first book, Chapter 14, that no matter the distance of external things from the body (in the heavens or not far from the body),[14] these things cannot be seen where they are really located. If bodies were perceived in physical space, the soul ought to separate itself from its body in order to see them. "The soul does not leave the body where it is located";[15] thence, external things cannot be perceived as external, that is to say in the place they occupy, without the particular body to which the percipient soul is closely united. And unless things are "immediately joined [*unies*] to the soul", perception cannot occur.[16] In this chapter the soul-body union argues in favour of direct perception by the soul of things that are other than material. Why are these things, which are immediately united with the soul, perceived as "external to the soul", and being in the physical space outside us?[17] The answer is, according to the second paragraph of Chapter 14, the will-independency of our sense perception. The soul has no means of perceiving bodies, unless "the motions to which the ideas of these objects are joined by nature occur in the brain."[18] Now this connection, due to a natural institution, leaves room for something other than mere sense-datum. The organic motions that happen to reach the brain are not themselves perceived. In perceiving something, the soul perceives "only its own sensations" and is at the same time aware of their adventitiousness: "the soul [. . .] knows that these sensations are not produced within it by itself."[19] The false judgment that the perceived objects

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[13] *Search*, 3.2.1, § I, 413/217: "it is not likely that the soul should leave the body to stroll about the heavens, as it were."

[14] The first edition of *Search* 1.14 (1674) highlighted the contrast between the immensity of a distance ("in the heavens") and a close proximity ("two feet"). The example of a picture at a distance of "two feet" was replaced afterwards by the example of houses the distance of which from the observer grew gradually: "a hundred feet" in the second edition in 1677 and finally "a thousand feet" in the third edition in 1678 (see *Search*, 156 note d/67).

[15] *Search*, 1.14, § I, 156/67.

[16] *Search*, 1.14, § I, 156/67–68.

[17] *Search*, 1.14, § II, 156/68.

[18] *Search*, 1.14, § II, 157/68.

[19] *Search*, 1.14, § II, ibid.

are "external to [the soul] and in the cause that represents them to it"[20] is thus quite natural. The externality is inferred by an inescapable false judgment that is as will-independent as the sensation with which it compounds the enlarged perception of a material object as external. To judge that the very thing I now perceive is outside me (for instance, to judge that the very stars I actually see are in the heavens) exceeds the mental modification or idea that attends in my soul a certain state in my body. What is directly or immediately perceived is not an external object, but merely something in my soul. Thus, the soul's perceiving of a material object does not involve only the sense-datum with which it is directly acquainted, but also an inferential reference to its external cause. This hypertrophy of perception is however justifiable, for the false referential judgment is well-founded on the pragmatic purposes of the mind-body union. By redoubling the organic information to which some definite perception is annexed with the inference of the externality of the perceived object, the soul makes a distinction between this external object and all others, and thus it completes its divine mission as regards to man's conservation of his own life.[21]

This analytic description might seem to provide us with enough material for understanding the way in which perception of external objects can be effected. Both of the ontological difficulties emphasized in the third book of *The Search after Truth* seem to be solved. The requirements of the incommensurability between the materiality of external things and the immateriality of the soul, and of the intimate union of the soul with its body, are fulfilled by such an anatomy of sensation. A natural institution (namely, God's will), which secures that certain modifications in matter are the occasion of correlative ideas in the soul, allows us to assert that we perceive bodies. Although external things are "by themselves" or immediately imperceptible – the only directly perceived things being mental states naturally related to actual motions in the brain – it is possible to say in a pragmatic manner that external or existent bodies are perceived by the mediation of these immediate perceptions. Thus, the thesis would be that external objects are indirectly perceived by means of ideas on occasion of some bodily states with which these ideas are naturally connected. Malebranche writes precisely in the first book of *The Search after Truth*, in the same Chapter 14: "it should be noted that there are two kinds of beings, those which our soul sees immediately, and those which it knows only by means of the former."[22] This thesis is exemplified by the manner in which the rising sun is indirectly perceived by means of a "first sun which is intimately joined [*uni*] to our soul."[23] "When I see the sun rise, I first perceive [the sun] I see immediately, and because I perceive this [first one] only because there is something outside me that produces certain motions in my eyes and brain, I judge that this first sun, which is

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[20] *Search*, 1.14, § II, ibid.

[21] See likewise Descartes, *Meditatio Sexta*, AT VII, 74–5, pp. 81, 83. The abbreviation "AT" refers to the standard edition by Charles Adam and Paul Tannery: *Œuvres de Descartes* (Paris: Vrin, 1964–1976).

[22] *Search,* 1.14,§ II, 159/69.

[23] *Search,* 1.14,§ II, ibid.

in my soul, is external to me and that it exists."[24] Notwithstanding the false judgment involved in this perception of the sun as an external sun, the forementioned thesis looks admissible, since it gives an account of the reason why the case cannot be different: our perception of material things is finalized by the anthropological *dictamen* of self-preservation. The structure of perceptual knowledge exhibited in this thesis suffices for explaining how the immaterial mind does perceive material things. Bodies are not perceived in the physical space where they are immediately imperceptible, rather the soul directly perceives things intimately united with itself. Bodies remain imperceptible as such, but, according to Malebranche, that does not allow us to say that they are wholly imperceptible.

The anatomy of sensation leaves undetermined the question of the identity between the two protagonists performing successively the main role in Chapter 14 of *The Search*'s first book: on the one hand, ideas are naturally connected with certain modifications of matter and on the other hand, objects are immediately or intimately united with the soul. Can the notion of an idea stand as indifferent for these two protagonists? Now, this indeterminacy cannot be reduced unless we make a detour *via* the Cartesian orthodoxy with regard to the causal conception of sense perception.[25]

2 The Causal Theory of Perception: The Cartesian Model

Even though Malebranche, in his *Last Elucidation* (*Elucidation on Optics*, 1712), "render[s] problematic the task of assigning a fixed, immutable relation betwen brain states and experiences, a task that the assertion of causal connections between brain and mind presupposes",[26] in the first book of *The Search after Truth* he shows undoubtedly an adhesion to the Cartesian thesis of the correspondence between the mind's particular sensations and bodily motions. Arnauld is thus right to stress in 1683 that Malebranche, as a good Cartesian, agrees that sensations are not caused in the mind "for no reason [*à propos de rien*]", but occur "in a well-regulated order,

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[24] *Search*, 1.14,§ II, ibid. (I have made small changes in the translation). In his book *Perceptual Acquaintance from Descartes to Reid* (Minneapolis: University of Minnesota Press; Oxford: Blackwell, 1984), J. W. Yolton stresses that this passage constitutes "a literalized version of Descartes's objective reality" (Ch. 2, 48). I think that the matter is not so clear-cut.

[25] I use this expression in a way which would seem quite insufficient to anyone scrutinizing the CTP (cf. H. P. Grice, "The Causal Theory of Perception", in G. J. Warnock (ed.), *The Philosophy of Perception* (Oxford: Oxford University Press, 1967), 85–86). Furthermore, it is probably excessive to speak of a *Cartesian orthodoxy* on the topic of the causal efficacy assigned to physical beings or events. On this point, I find that Margaret Wilson's *mise au point* is very stimulating. See "Descartes: Origin of Sensation", in M. D. Wilson, *Ideas and Mechanism: Essays on Early Modern Philosophy* (Princeton: Princeton University Press, 1999), Ch. 4.

[26] C. Wilson, "Constancy, Emergence, and Illusions: Obstacles to a Naturalistic Theory of Vision", in S. Nadler (ed.), *Causation in Early Modern Philosophy. Cartesianism, Occasionalism, and Preestablished Harmony* (University Park: The Pennsylvania State University Press, 1993), 160.

according to the plan [God] had when he joined our soul to a body."[27] Moreover, a few years before *On True and False Ideas* challenges the coherence between Malebranche's agreement to "what the author of nature has established" and the thesis of the perception of bodies through their ideas in God,[28] the unpublished *Examen du Traité de l'essence du corps* (1680)[29] refers to Malebranche's conception of reciprocal modifications of body and soul, in *The Search after Truth* 1.12, as a strictly Cartesian explanation of the soul-body union. In Chapter 10 of the first book of *The Search*, it is said indeed that, once one has assumed that "the soul immediately resides in that part of the brain to which all the sense organs lead", it is not a very difficult task to explain "how sensation occurs."[30] The brain is as it were the soul's main home, insofar as the finality of the union demands the soul not to be indifferent to the cerebral changes occasioned from without. It is with regard to this finality that the motions, which are communicated without interruption from external objects to the part of the brain that receives nerve information, give an occasion to transpose their varying degrees into essentially different sensations. These provide us with accurate marks of the qualities of the external objects that are relevant to the preservation of the body.[31] Does Malebranche's agreement with the thesis of the correlation between cerebral states and mental states imply that he subscribes to a causal theory of perception, according to which the immediate or direct perception of an object requires a causal chain leading to the occurrence of perception through a process that begins in the external object? In its first edition, *The Search after Truth* is not reluctant to say that things imperceptible *per se* as external objects are perceived "in [the] brain"[32] and are seen "at the most but in the brain."[33] The anatomy of sensation mentioned above allows for the juxtaposition of the thesis of the mental correlates of cerebral changes with the thesis that the only objects perceived are objects immediately united with the soul. Does Malebranche consider that, since the physical object is not by itself perceptible, the only possible immediate object of perception is given by the last link in a complex causal chain between the external object and the brain?

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[27] *On True and False Ideas*, Ch. XVI, 88. Arnauld's argument begins by recalling Malebranche's distinction, in *Search* 1.1, § I, between perceptions representing things outside us and perceptions representing merely our sensations.

[28] *On True and False Ideas*, Ch. XVI, 89.

[29] This treatise (first printed posthumously in 1780) is contained in Arnauld's *Œuvres*, Vol. 38. It is published separately in the *Corpus des Œuvres de philosophie en langue française* (Paris: Fayard, 1999): see p. 90 for a quotation from *Search* 1.12, § V (141–142/59–60, from "Little concentration is required to see that the natural cause of our sensations [. . .]" to "[. . .] they make a whole").

[30] *Search,* 1.10, § III, 125/50.

[31] See *Search,* 1.10, § V, 126–127/51.

[32] *Search,* 1.14, § I, 156/67: "Our soul, then, must see *the picture* and the stars *in its brain*, since the soul does not leave the body where it is located, and yet sees them."

[33] *Search,* 3.2.1, § I, 413 note e/217: "Thus, [the soul] does see [objects external to us] *at the most but in the brain*, and our mind's immediate object when it sees the sun, is not the sun, but something that is intimately joined to our soul, and this is what I call an *idea.*"

Descartes had shown in the *Treatise on Man* that the soul gets the perception of sensible qualities, whether they belong (motion, figure . . .) or not (colour, sound . . .) to the nature of bodies, only by means of an arrangement of the parts of the brain.[34] Material figures related to the external objects that press the sense organs are traced first in these organs, then through the nerves in the brain's internal superficies, and lastly in the gland H. These last figures "give occasion" for the soul to perceive the different sensible properties of things. In a note to his edition of Descartes' *Œuvres philosophiques*, Ferdinand Alquié writes: "Descartes allows [. . .] a transferring of the image as far as to the innermost part of the brain. By this way, he believes to escape the difficulties peculiar to the conception of a soul obliged to take itself to the objects, or at least to the eyes."[35] As is argued in the *Dioptrics*, images, insofar as they consist only of a composition of motions and bear a minimal and very imperfect resemblance with external objects (even the figures in which the residual resemblance is lodged), contribute to solving the issue of perception: they "give the soul the means to sense all the diverse qualities of the objects they refer to."[36] Since the resemblance is removed from images, there is no need for a homunculus (namely, second-rank eyes) within our brain to look at these images themselves. By a natural institution, the motions that compose the cerebral image are sufficient to stimulate the soul into having such and such a perception of an object.[37] Thence, the pressure of external objects on the sense organs produces motions that are propagated through the intervening nerves to the brain and, furthermore, psychic or mental effects, perceptual experiences, which occur immediately when nervous motions reach the last step in the causal chain running from the external object to the brain. As Descartes claims in the *Dioptrics*, the soul "does immediately see only through the intermediary of the brain",[38] that is to say, the sense-datum consists in a mental phenomenon (a conscious experience).

Indeed, the dualism between soul and body is not to be interpreted as the metaphysical impossibility of any interaction between the two heterogeneous substances. This interaction is, on the contrary, involved in a peculiar mode of copresence of *ego* and body, which *Meditatio Sexta* portrays as a *quasi permixtio mentis cum corpore*.[39] Descartes founds the immediacy of the soul's presence to the body and reciprocally of the body's presence to the soul on the immediate interaction between them. Article 13 of the first part of the *Passions of the Soul* restates the point by recalling that the *Dioptrics* has shown that the "diversities" in external objects are communicated to us only through motions that begin in some nerve endings and

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[34] See AT XI, 161 (the soul cannot get a sensation but "through the intermediary of the brain's parts").
[35] Descartes, *Œuvres philosophiques* I, ed. F. Alquié (Classiques Garnier, 1973), 449, note 1.
[36] *Dioptrics*, IV, AT VI, 113.
[37] See *Dioptrics*, VI, AT VI, 130.
[38] See *Dioptrics,* VI, AT VI, 141.
[39] *Meditatio Sexta*, AT VII, 81, l. 13 (see l. 2–5: "[. . .] me non tantum adesse meo corpori ut nauta adest navigio, sed illi arctissime esse conjunctum et quasi permixtum, adeo ut unum quid cum illo componam").

terminate in the brain, where they immediately act on our soul. Assuredly it is the ultimate motions, produced in the part of the brain where there is an immediate point of union with the mind, that *represent* objects to the soul. By their immediate action on the soul, they make it perceive the external objects.[40] As has been stated in *Meditatio Sexta*, on account of the union, the soul or *facultas cognoscitiva* can apply itself to its body ("corpus ipsi intime praesens"),[41] but this application to material images is nothing other than the soul's capacity to be touched by cerebral impressions. It does not require any distance between the soul (as a spectator) and the body with which it is united.[42] There are thus two sufficient conditions of sensible perceptions: *anima sive mens intime cerebro conjuncta* on the one hand, and *motus qui in cerebro a nervis excitantur* on the other.[43] As these motions are *motus immediate in animam nostram agentes*, a sensible perception is achieved by means of motions representing external objects to the soul.[44] In the fourth part of the *Principia philosophiae* Descartes claims that, for instance, "our soul is of such a nature that diverse local motions are sufficient to excite in it all its sensations."[45] On this analysis, immediacy is the property of a cogitative effect produced as the result of a whole mechanical process under the supposition that the mind is united with the body in a determined part of the brain that "immediately affects" it.[46] The thoughts through which the mind immediately gets the representation of external objects are the instantaneous[47] correlates of the modifications of body that produce them. On account of the intimate contiguity between the mind and the body, these thoughts have a kind of continuity with the motions that represent the external objects in the brain. The mind represents to itself, by some thought, what the ultimate cerebral motion already represents through a corporeal impression, the external object. In view of the natural institution, which rules the intimate union between the soul and its body, it may be ascertained that the mental representation of the object perceived by the senses has a correspondence to the manner in which the innermost part of the

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[40] See also *Passions of the Soul*, I, § 35, for this notion of immediacy (AT XI).
[41] *Meditatio Sexta*, AT VII, 72.
[42] See Denis Kambouchner, *L'homme des passions* I (Paris: Albin Michel, 1995), 449, note 34: "The soul is [...] *touched* (= directly affected) by an impression which incites it to *have some thought*, but it does not *stand next to* this impression, as if it might *contemplate* it like a picture."
[43] For these two conditions, see *Principia Philosophiae*, IV, § 189 and § 190.
[44] See *Passions of the Soul*, I, for this notion of motions which "represent to the soul the objects moving the senses" (§ 47; see likewise § 50, about motions "which represent certain objects to the soul").
[45] *Principia philosophiae*, IV, § 198: "[...] eam esse animae nostrae naturam, ut diversi motus locales sufficiant ad omnes sensus in ea excitandos" (AT VIII-1, 322). See also § 197: "[...] talem esse nostrae mentis naturam, ut ex eo solo quod quidam motus in corpore fiant, ad quaslibet cogitationes, nullam istorum motuum imaginem referentes, possit impelli" (AT VIII-1, 320).
[46] *Meditatio Sexta*, AT VII, 86: "mentem non ab omnibus corporis partibus immediate affici, sed tantummodo a cerebro, vel forte etiam ab una tantum exigua ejus parte" and 87: "[motus], qui fiunt in ea parte cerebri quae immediate mentem afficit."
[47] See for this notion *Regulae ad directionem ingenii, Reg. XII*, AT X, 414: "eodem instanti."

brain is arranged.[48] But given its proximity to the cerebral impression of an image, the immediate perception by the soul of a sensible quality gets a form of correspondence with something answering to it (but not resembling it) in the external object itself. We may indeed state, according to *Meditatio Sexta,* that all sensations, as they correspond one-to-one to motions produced in the part of the brain which "immediately affects" the soul, have a correspondent basis in real diversities of bodies.[49] Colours, sounds, and other sensations are nothing in the external bodies, but there are nevertheless in these bodies some real properties that are the actual basis of their being perceived by the soul.

In the Cartesian causal theory of perception, the soul has immediate knowledge, not of a corporeal motion propagated from the external object and terminating in the brain, but of a mental representation that the final cerebral impression immediately produces in it. According to this conception, what is immediately perceived in the soul is structurally representational of the material object outside it; representation-without-resemblance is, as the *Passions of the Soul* (I, § 47 and § 50) reminds us, a sort of *continuum* between the ultimate cerebral effect of the initial stimulation and the phenomenal content of a sensible perception. Resemblance is dismissed, but there is a kind of conformity[50] between our sensible ideas and the material figures transmitting from the external object to the brain an information which is sufficient for the practical finality of the mind-body union. Besides, this conformity between some thoughts and some material images solves the apparent discrepancy between the passages where Descartes' *Treatise on Man* restrains the use of the notion of idea to the ultimate corporeal modification that is the proximate cause of a psychological modality,[51] and the passage where the *Tertiae Responsiones* undermines the restriction of ideas to the material images figured in the *phantasia corporea* and extends the term "idea" to denote everything that is immediately perceived by the mind ("pro omni eo quod immediate a mente percipitur").[52] There is no doctrinal change, for the semantic extension of the term "idea" in the *Meditationes* reveals that its use for denoting corporeal or cerebral images has to be placed itself under the control of the *mens*. The definition of an idea in *Secundae Responsiones* stresses that a thought

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[48] See *Meditatio Sexta*, AT VII, 86: "quotiescunque eodem modo est disposita, menti idem exhibet."

[49] See *Meditatio Sexta*, AT VII, 81: "recte concludo, aliquas esse in corporibus, a quibus variae istae sensuum perceptiones adveniunt, varietates eis respondentes."

[50] See *Meditatio Sexta*, AT VII, 73: "quod mens, [. . .] dum autem imaginatur, se convertat ad corpus, et aliquid in eo ideae vel a se intellectae vel sensu perceptae *conforme* intueatur" (my emphasis).

[51] See AT XI, 448–451. Alquié (*Œuvres philosophiques* I, 450, note 2) writes: "Descartes seems to allow here an immediate presence of the organic to the mental, which enables him to call *ideas* the physical conditions of our sensations. We may thus presume that at this time his metaphysics was not clearly constituted." Jean-Marie Beyssade ("Le sens commun dans la *Règle XII*: le corporel et l'incorporel", *Revue de métaphysique et de morale,* 4 (1991), 505) denies this last assertion. Sir William Hamilton solves the apparent discrepancy by using the distinction between the material idea as "the proximate bodily antecedent" and the idea as "the mental consequent", that is to say, as the modification of the mind itself (see Reid, *Philosophical Works* I, 273 a note).

[52] See AT VII, 181 (*Resp. ad Obj. 5*). No wonder Arnauld reads the Malebranchian *definiens* "whatever the mind perceives immediately" (*Search*, 1.1, § I) as a Cartesian statement.

excited by a material image is not merely a psychological modification of the mind, but that it has at the same time a "form" which is immediately perceived as such by the mind. Thus, as an information of the mind and known as such by the mind, any image imprinted in the brain may rightly be called an *idea.*[53] In order to give the soul the faculty of perceiving external things, neither the soul nor the material object (as it is the case in the doctrine of the *eidōla*) has to be carried out of its residence or place. The Cartesian image does the job. The contiguity required for the mind's sensible perception of material objects is warranted by no other means but the intimate touching of the soul by its body. Thus, what is exhibited in the mind's thought is in continuity to what is represented by the brain's motions – not the external thing in itself, in its essence or nature, but the external thing as the constant referent of the whole causal process and of its mental effect.[54]

3 The Indictment Against Descartes

Descartes claims, in his *Discourse on the Method,* that "we should never allow ourselves to be persuaded except by the evidence of our reason."[55] In *The Search after Truth* Malebranche makes use of this criterion in his more thoroughgoing analysis of sense perception, than the analysis based only on the thesis of a natural connection between ideas of objects and some motions of the brain. The above-mentioned remnants of the Cartesian correspondence-theory in the first part of *The Search* cannot be taken as a symptom of Malebranche's commitment to an analysis that would lead to the assertion of a representation moving from the corporeal to the mental.[56] The *Elucidation Six* leaves no ambiguity: "it is certain that the brain's motions do not produce the soul's ideas."[57] Cerebral modifications do not have the power of representing ideas to us. In Malebranche's view, the application of the Cartesian rule of evidence ("whatever I conceive very clearly and distinctly is

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[53] See *Secundae Responsiones*, AT VII, 160–161: "non solas imagines in phantasia depictas ideas voco; immo ipsas hic nullo modo voco ideas, quatenus sunt in phantasia corporea, hoc est in parte aliqua cerebri depictae, sed tantum quatenus mentem ipsam in illam cerebri partem conversam informant."

[54] This point ought to be confronted with the semiotic element involved in Descartes' analysis of sensations. See *Treatise on Light*, I, AT XI, 4 and *Dioptrics*, IV, AT VI, 112. Cf. J. W. Yolton, *Perception and Reality. A History from Descartes to Kant* (Ithaca, NY: Cornell University Press, 1996), Ch. 8 ("The Semantic Relation").

[55] See AT VI, 40.

[56] See *Search*, 2.1.5, § I [which belonged in the 1678 edition to the third chapter of the second part of this second book], concerning, as is said in the title (212 note a/101), the "*mutual* connection" between "the ideas of the mind" (a merely provisional expression) and "the impressions in the brain" ("impressions" translates the French word "traces"). From Malebranche's viewpoint (216/102), the "natural and mutual correspondence of the soul's thoughts with the brain's impressions" *doesn't require* 1) that the soul *considers* these impressions, nor 2) that "these impressions include these ideas", nor 3) that "the soul receives its ideas from these impressions." The "general laws of the union of soul and body" suffice for eliminating these wrong implications.

[57] *Elucidations*, 59/572.

true")[58] invalidates from the outset the Cartesian causal theory of sense perception. Presumably, in his eyes the Cartesian conception of substantial union promotes a form of "proportion"[59] between material things and the immaterial soul. Now the ontological impossibility with regard to immediate perceptibility of bodies (or their perceptibility "by themselves") cannot be overcome by the Cartesian device. The reason is known to any good Cartesian: we cannot assign to bodies properties which are not conceived very clearly and distinctly in the idea of matter. But, according to *Elucidation Ten*, what is most evidently conceived in this idea is that "bodies [. . .] cannot act on our mind, nor represent themselves to it."[60] The idea of matter does not contain the faculty of acting on an immaterial thing. Therefore, the whole causal explanation of how our sensible perceptions are stirred up by material processes constitutes a misconception. When putting forward the intimate union of soul and body, Descartes is not clear enough with the "occasion"[61] the soul is naturally given to conceive ideas correlated to motions in the brain. He misunderstands the relation of the soul's modification to "*what takes place in the body to which it is joined.*"[62] *Meditatio Sexta* leaves yet an unexplored possibility: in addition to the impossible immediate communication of our sensible ideas by God himself and our propensity to assign their conveyance to corporeal things,[63] the possibility remains to conceive that our senses, as it is assumed in *Elucidation Ten*, are "but occasional causes of the instruction that eternal wisdom gives us in the most secret recesses of our reason."[64] The Cartesian *institution de la nature* turns from Malebranche's standpoint into a metaphysically poor thesis. Such a natural institution must not be willed once for all, so that its author afterwards delegates the causation of sensible perceptions to corporeal modifications, but it has to be willed at every time, so that its author is himself the true cause of any actual correspondence between a corporeal impression and some modification in the soul. With regard to the body-soul union, the body is only the natural and occasional cause of our thoughts, and the relation between our thoughts and what takes place in our body cannot be conceived as a necessary connection.[65] By contrast, the true cause of the mutual connection between the soul's modifications and the body's modifications is not a natural one.[66] In presuming that the intimate union of the body and the mind displays the body's capacity of acting on the mind, Descartes leaves no room for the metaphysical possibility that different species of some generic sensation, for example different colours (blue, green, grey, or another one yet unknown) correspond to the same bodily modifications.

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[58] See *Discourse on the Method*, IV, AT VI, 33.
[59] *Search*, 3.2.1, § I, 417 note d/219.
[60] *Elucidations*, 127/612. See also *Conversations chrétiennes* (1677), Entretien I, ed. G. Rodis-Lewis (Paris: Folio-Gallimard, 1994), 29.
[61] As for Descartes' use of this notion, see, *inter alia*, the *Treatise on Man*, AT XI, 143–144.
[62] *Search*, 1.13, p. § I, 143/61 (Malebranche's italics).
[63] See *Meditatio Sexta*, AT VII, 79–80.
[64] *Elucidations*, 146 note d/623.
[65] See *Search*, 6.2.3, 315–316/449–450.
[66] See *Search*, 6.2.3, 316/450 and 1.13, § III, 145/62.

The indefinability of sensations requires, for example, that someone who has never seen a white thing be put in ordinary circumstances where one has such a sensation. This ostension does not yet give us metaphysical certainty that we have succeeded in making this person perceive whiteness.[67] For Malebranche this radical perceptual relativity is more fundamental than the one ascribed to the differences of sense organs from one person to another. He probably thought that its omission in the Cartesian assignment of the origin of sensation must be considered as an avowal of a weak conception of the theological foundation of the very givenness of sensations.

According to Malebranche's *Search after Truth*, the ill-founded Cartesian analysis of sensations amounts to a persistent illusion. We might say that in his appraisal, Descartes is a sort of half-naïve philosopher who is right and wrong at the same time. On the one hand, he founds on a clear conception of what is contained in the idea of matter or extension the conclusion that, for example, the sweetness or the whiteness we sense when we are eating honey or seeing a snowball are not properties of these external objects, but our soul's modifications. But on the other hand, he claims that, although the external objects do not contain in their nature or essence the sensible qualities perceived by the soul when these objects act upon our sense organs, the mind's modifications in which these sensible qualities consist are caused by the external objects themselves. Descartes reaches only half a truth concerning perception, when he states that sensible qualities are modifications of the soul. He is at the same time wrong concerning the true cause of this effect. He mistakes a mere correspondence, or regular connection between corporeal modifications and the soul's modifications, for a real and immediate causation of sensible perceptions by bodily motions. He has thus to be numbered among those who judge that a thing that is always going with an effect is itself the cause of this effect, that is to say, those who fancy a necessary relation where there is no such thing.

What the Malebranchian anatomy of sense perception, in Chapter 14 of *The Search*'s first book, provisorily calls "ideas", naturally connected with motions occurring in the brain, seems to be unproblematically in accordance with the Cartesian model. Sense perception is a "form" or idea that cannot be dissociated from the modification produced in the mind on occasion of bodily modifications. Even though external bodies cannot act but through a causal chain on the soul, the intimate mind-body union allows for an immediate action of the body on the mind. As is well shown in the *Dioptrics*, what affects the soul is an image (but not a picture), which represents the object it refers to.[68] The concomitant idea refers to the same thing. Thus, what does touch the soul is something corporeal, linked by an antecedent causal process to the very external object, and this affection gives rise to a representation ("exhibere" is the favourite Cartesian term) of the same object in the soul. In this description, nothing else is needed to be "intimately united" with the soul besides the mind-body union. What is immediately united with the mind is but a corporeal movement. As for the idea, it is itself immediately within the

[67] See *Search*, 1.13, § V, 147–151/63–65.
[68] See AT VI, 113.

mind. There is no room left for a *tertium quid*, an immaterial object that ought to immediately adhere to the soul so that material objects may be indirectly perceived. No room is left for "representationalism" which contends that this *tertium quid* has to be the immediate object of perception, mediating a perception of the external object.[69] By contrast, the doctrine of sense perception in Malebranche's *Search after Truth* rests on the elucidation of the difference between the first and the second protagonists introduced in Chapter 14 of the first book: doesn't the immediacy of perception require another level of "intimate" or "immediate" uniting of the object with the soul, than the mutual correspondence between bodily and mental states? Is the ontological status of the immediate object of perception, which is itself (and not only some bodily state) immediately united with the soul, sufficiently advocated when the presence of an object *to* the soul doesn't seem possible without its presence *in* the soul?[70]

4 The Ontological Requirements of an "Immediate Object" of Perception

We have thus to revert to the beginning. We know now that the two reasons why, according to the third book of the *Search*, "material things [. . .] cannot be [united with] our soul in the way necessary for it to perceive them",[71] reduce in fact to one. The whole difficulty rests upon the opposition of the two substances. The distance of external things is not determinant. Bodies as such, close or distant, are not perceptible *per se*, that is to say, material things cannot act on the immaterial mind. The substantial dualism implies, as is said in the *Elucidation Ten*, that all bodies are "by themselves entirely invisible"; for want of a causal power on our mind, they cannot "represent themselves" to it.[72] With respect to this difficulty, the Cartesian causal theory has to be dismissed as bringing a contradiction into the comprehension (in the Port-Royal Logic sense) of the idea of matter. Admittedly, one could try to sweeten this theory so as to keep only the nomic correlation between ideas and

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[69] The assigning of this doctrine to Malebranche is not unanimous. See S. Nadler, "Malebranche's Theory of Perception", in E. Kremer (ed.), *The Great Arnauld and Some of his Philosophical Correspondents* (Toronto: University of Toronto Press, 1994), Ch. 5. Nadler disagrees with the reading of Malebranche's theory of perceptual acquaintance in terms of "a representative theory of perception." By contrast, see, by the same author, *Arnauld and the Cartesian Philosophy of Ideas* (Manchester: Manchester University Press, 1989), Ch. 3. For a stimulating presentation of the debate, see R. Glauser, *op. cit*., Introduction.

[70] See *Search*, 1.14, § I, 156/67–68: "the stars immediately joined to [*unies à*] the soul (which are the only stars it can see) are not in the heavens" and § II, 159/69: "[. . .] I judge that this first sun, which is in my soul, is external to me and that it exists." The disjunction between the immediate union and the inherence is not yet contended. As for the notion of "presence to the mind" or "direct presence" to the mind, see J. W. Yolton, "On Being Present to the Mind: A Sketch for the History of an Idea", *Dialogue*, 14:3 (1975) and Yolton (1984), Ch. III.

[71] See *Search*, 3.2.1, § I, 417/219.

[72] *Elucidations*, 127–128/612.

corporeal impressions and assign to the soul itself the action on itself required for giving rise to the different ideas of external objects. One would say then, according to a hypothesis examined in the third book of the *Search*: "our souls are [excited] to produce [the ideas of the things] by the impressions that objects make on the body, though these impressions are not images resembling the objects causing them."[73] But this combination, of an antecedent material causation of impressions (where the external body is the agent) and a subsequent mental causation of ideas (where the mind is the agent), is invalidated by Malebranche as imputing to the soul a *creatio ex nihilo* of ideas, since these cannot be derived from material impressions in the brain. Further, the recourse to the faculty of thinking dissatisfies him. In his *Elucidation Ten*, he complains that, "some [Cartesian gentlemen] do not hesitate to say that the human mind produces in itself the ideas of all things by its *nature*, because it has the *faculty* of thinking."[74] This would amount to saying that the mind can give itself its own essence: the faculty to produce ideas in one's mind ought to be first a faculty of self-creation and self-conservation. But the transgression of a dependence of created substance on uncreated and incommensurable substance would be in vain. Indeed, if the soul could act on itself and cause something in itself, this thing would be a bare modification of the soul. Now, a modification is not distinguished from the being that happens to be modified in such and such a manner, and so a modification cannot represent to the soul anything really distinct from the soul.[75] The only representation allowed is a self-representation. The hypothesis of a soul producing its ideas amounts to restraining representationality to a representation of the mental events themselves. So, all ideas are granted a representation which, according to the first chapter of *The Search*, ought to be peculiar to our sensations and sentiments: "they represent to us but what takes place within us."[76] Knowledge that depends on ideas produced by the soul cannot be different from perception by the soul of its own phenomena, that is to say, from the consciousness through which "we know everything that is not distinct from ourselves."[77] The soul's self-identity merely allows for a self-sense, understood as a passive consciousness, not the perception of things distinct from the mind. Objective knowledge is made impossible from the

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[73] *Search*, 3.2.3, 422/222 (I have made a little change). For various hypotheses attempting to give meaning to the mediate perceptibility of bodies, see 3.2.1, § II, 417/219. The above hypothesis should be confronted with the Cartesian assertion in the *Notae in Programma* that "nihil [est] in nostris ideis, quod menti, sive cogitandi facultati, non fuerit innatum", namely, that what comes to our brain *per organa sensuum* only gives the mind the "occasion to form (*efformare*) [. . .] ideas, by a faculty innate in it" (see AT VIII-2, pp. 358–359). The way in which innatism is later criticized in *Search* (3.2.4 and 3.2.6) ought to be paralleled with some arguments in 3.2.3 (concerning, for example, our dependence on God, or the general ideas).

[74] *Elucidations*, 144/622 (Malebranche's italics).

[75] See *Elucidation Ten, Elucidations*, 142/621 and 149/625. Likewise, *Search* 5.5, 168/364: "man's mind [. . .] does not see in itself things that are distinguished from itself" (I have made a change: "distinguished" rather than "different").

[76] See *Search*, 1.1, § I, 42 note b, concerning the opposition in the 1678 edition (and in the previous ones) between ideas which "represent something outside us" and ideas which "represent to us but what takes place within us."

[77] *Search*, 3.2.7, § I, 449/236. See also 3.2.1, § I, 415/218.

outset. A modification of the soul, even under the supposition of its direct causation by the faculty of thinking, cannot be an idea representing an external thing.

In order to be perceptible, material things have thus to be represented to the mind by something independent from its faculty of thinking, something necessarily as immaterial as the soul, since material things are not endowed with the power of acting on the soul. Only an immaterial thing is able to fulfil the absolute exigence of an intimate union with the soul. The immediacy of perception, which is necessarily lacking on the side of material things, would remain otherwise indefinitely beyond reach. The true nature of the soul consists in its immediate awareness of what is intimately united with it and contiguous to it. The mind perceives necessarily what is "actually present to it."[78] The issue is to decide if the idea of a corporeal thing can be such a thing. According to Malebranche, it is best to draw an ontological lesson from the logical status of the ideas of bodies. On the one hand, the different representational contents of ideas (the idea of the sun is not the idea of a house, nor of a horse, nor of a river, etc.) are just so many different "properties", that they give the unquestionable proof that these ideas are real existents, since *non ens* has no properties.[79] As real existents these are substantial existents. The properties of a horse are represented without needing the representation of the properties of any other material thing. Each idea is apart from the others, and the mind can perceive the one without needing the perception of any other. As existents, ideas of bodies are mutually really distinct. Each one may be conceived without the others.[80] The intrinsic distinction of properties has to be held as the indication of a real distinction. Therefore, ideas of corporeal things are not modes that can be defined by an undifferentiated dependence on the same substantial subject. On the other hand, the thesis that the ideas of bodies represent external things as their causes is wrong. It is founded only on the usual copresence of the idea and of its object, which is mistaken for a causal relation from the existence of an object to the presence of an idea. The representationality of ideas requires an anteriority, not a posteriority, of their existence to the existence of the bodies they represent. Indeed, even if all the external bodies without us were annihilated and consequently rendered absolutely invisible, we would perceive the same things as previously, as if the world's annihilation had not happened. This hyperbole, which is a bare amplification and generalization of the argument of paradigmatic illusions (dreams, hallucinations),

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[78] *Search*, 3.2.1, § I, 414/217.

[79] *Search*, 3.2.1, § I, 414 note i-415/218: "as if ideas did not have a great number of properties, as if the idea of a square, for example, were not different from that of some number, and did not represent completely different things, which can never be the case for nonbeing, since nonbeing has no properties"; 3.2.3, 423/222: "since bodies have real properties, no one can doubt that they are real beings, or that they differ from one another, and that they represent altogether different things" (for the examples, see 3.2.5, 433/228). It would be instructive to examine the distinction between the properties contained in the idea of a body and this body's "form" or "essential difference" (as for the body's "form" understood as the configuration of its parts, see 1. 16, § IV, 169–170/75).

[80] See *Search*, 1.12, § V, 141/59: "there is no other reason for saying that a square is not a circle, than that the idea of a square is different from that of a circle and that the one can be thought of without thinking of the other."

reveals in the same way that we can perceive things which do not exist. As it is claimed in Chapter 10 of *The Search*'s first book: "there is no necessary connection between the presence of an idea to a man's mind and the existence of the thing the idea represents."[81] Ideas of bodies are thus, not only things really distinct from the mind and really distinct from each other, but also things really distinct from their objects.[82] There is no alteration of an existent body, or of corporeal motions connected with certain correlative sensations, that might produce a modification within the idea of this body. Not even the destruction of the external object, or the deletion of all cerebral states, could succeed in modifying this idea. It may be concluded that an idea, as a necessary and immutable thing[83] and distinct from the material thing whose properties are represented in it, can fulfil the inescapable requirement of the intimate union between the object of perception and the soul. Only a thing enjoying this nature has the possibility of an immediate action on the soul.

Provided that the external object is immediately imperceptible by its very nature, immediacy necessarily qualifies the thing that can represent a body's properties independently of the actual existence of this body – a thing that is thence representational by itself, purely intrinsically. Thus, when Malebranche states in *The Search*'s third book the following nominal definition: "by the word *idea*, I mean here nothing other than the immediate object of the mind, or the object closest to the mind, when it perceives *something*",[84] he makes unambiguous the content of the former definition in *The Search* 1.1, "whatever the mind perceives immediately."[85] At the same time he denies the pertinence of the Cartesian definition in the *Secundae Responsiones*: "*ideae* nomine intelligo cuiuslibet cogitationis formam illam, per cuius immediatam perceptionem ipsius eiusdem cogitationis conscius sum."[86] The immateriality of an idea is in common with Descartes. But in Malebranche's view, an idea is immediately perceived not as a thought's form, but as a mind-independent and necessarily existent thing capable of acting on the mind. When Descartes proceeds in his *Tertiae Responsiones* to a semantic extension of the term "idea", far beyond its Hobbesian use for material images, he justifies himself by arguing that "ideas" have already among philosophers the meaning of "the forms of the divine mind's

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[81] See *Search*, 1.10, 121/48. Also *Elucidation Six*, *Elucidations*, 59/571: "why need there be external bodies for motions be stirred up in our brain?"

[82] See *Search*, 3.2.7, § I, 448/236: "to know [things] through their ideas, i.e., as I mean it here, through something different from themselves."

[83] See *Search*, 3.2.1, § I, 414/217: "the idea that necessarily exists, and that cannot be other than as it is seen." See also 1.14, § II, 159/69: "all things that we see immediately are always such as we see them."

[84] *Search*, 3.2.1, § I, 414 note a/217 (*idea* is Malebranche's emphasis, *something* is a variation).

[85] *Search*, 1.1, § I, 42 note b.

[86] See AT VII, 160. According to Arnauld, Malebranche's first definition equates "idea" and "perception" and thence 1) ought to be traced to Descartes' definition of "idea" in *Secundae Responsiones* (compare *On True and False Ideas*, Ch. III and Ch. VI); 2) is contradicted by the second definition that equates "idea" and "immediate object" and cannot be traced to the Cartesian definition (see *On True and False Ideas*, Ch. IV, 16–17).

perceptions."[87] The Cartesian definition alleged against Hobbes is then: "I take the term idea for whatever is immediately perceived by the mind." The similarity with *The Search*'s first definition is but apparent,[88] for in Malebranche such a *translatio* of ideas, previously divine to the forms of our thoughts, amounts to a destruction of their very nature. Understood as forms of the human mind's perceptions, ideas are no longer real existents, but merely the appearing to the human mind of its own modifications, as being *within the mind*. The representationality of ideas would thus consist in the mind's self-reference. Since the mind's modalities are nothing besides the mind modified, the mind representing to itself its own modalities cannot be but the mind representing itself to itself. This introspective narcissism would be the ruin of what provides the logical ground for the reality of ideas: the representation of the properties of external things.[89] The Malebranchian postulate of perceptual acquaintance in the third book of *The Search after Truth* echoes in fact the Cartesian criterion formulated in the *Letter to Gibieuf* (19 January 1642): "I cannot have any knowledge about things that are outside me, but through their ideas in me."[90] Such a criterion became the very principle of the *Logic or Art of Thinking* published by Arnauld and Nicole in 1662: "as we cannot have any knowledge of what is outside us but by the ideas which are in us, reflexions we may make on our ideas are probably the most important topic in logic, because everything else gets founded on them."[91] Now, according to Malebranche, Descartes himself and, following him, the Cartesian Port-Royal, unexpectedly repudiate this criterion (essential to any predication) when defining ideas as "the form[s] by which we represent to us" the things "present to our mind."[92] When the only things present to the finite mind are its thoughts, the Cartesian rule of judgment becomes ineffective: what is "present to the mind" in the Cartesian approach, in which this presence means a presence *within the mind*, is nothing other than the mind itself, modified this or that way, and it is quite improper to identify these mental modifications with formal concepts including the essential properties of things. Besides, the Cartesian *translatio* is not innocent:

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[87] See AT VII, 181.

[88] The real logical defect in *Search* 1.1 does not consist in restraining the notion of the modifications of the mind to our sensations and sentiments, but in extending the notion of idea to these mental states. As for our sensations and sentiments, Malebranche in fact proceeds to another imposition ("I will call them *modifications of the mind*"), signaling that the notion of idea (and thus the definition "whatever the mind perceives immediately") is no longer applicable. Whereas a Cartesian deems that both "idea" and "modification of the mind" are generic terms, extending to the two members in the division of representations in *Search* 1.1, Malebranche's claim is that none of them is such.

[89] See the manner in which Malebranche, in *Elucidation Three*, undermines the Cartesian ambiguity of the notion of idea (both the mental act of perception and the thing represented by this act) by another ambiguity that culminates in the definition of idea as "anything that represents things to the mind in a way so clear that we can discover by simple perception whether such and such modifications belong to them" (*Elucidations*, 44/561).

[90] See AT III, 474 (see also 476).

[91] This is the first statement found in the short preambula opening *Logic*'s first part on ideas. See the edition by F. Clair and P. Girbal (Paris: Vrin, 1981, 2nd revised ed.), 39.

[92] *Logic or Art of Thinking*, 37.

it drifts towards the view that a finite mind is self-sufficient and detains in itself the *rationes essendi* of all external things.[93] By applying the term *idea* to our thoughts, Descartes has tried as if to import into the human mind the very "forms of the divine mind's perceptions." When *Meditatio Tertia* asserts that the real properties of bodies, which cannot be "formally" in a thinking substance, can be "eminently" contained in me, because they are nothing more than *modi quidam substantiae*, "certain modes of substance" and "I myself am also a substance",[94] Malebranche would probably think that Descartes is not so far from agreeing with the hypothesis (examined in *The Search*'s third book) that "the mind [. . .] can, in considering itself and its own perfections, discover all things that are without it."[95] The thesis that external things are represented by ideas *in the mind* thus conceals a systematic attribution to the soul of what pertains to the divine intellect. The ontological impossibility of assigning to the mind itself the representation of external bodies is now at its height. In order to be representational, non-substantial things (the bare modalities of the mind) ought to contain eminently the perfections or essences of bodies.

Malebranche contends, on the contrary, that only ideas that are independent from thinking substance can give us the "*understanding*" of the properties that the essences of perceived things include or exclude.[96] For him, it is necessary that immediate objects, without which the external bodies would remain forever imperceptible, have a substantial existence and do not exist as mere modifications of the soul.[97] He denies that the inherence of thoughts in the soul may be identical with the presence of representational ideas to the mind. From his viewpoint, the formal reality assigned to ideas in Descartes' *Meditationes* necessarily fails to constitute an ontological basis of the representationality of ideas. Descartes does not see that representational *beings* are absolutely necessary in order to perceive bodies. He misses the point by giving too much to the mind. The thesis of the *Meditatio Tertia* about the idea is that "its nature is such, that it demands of itself [*ex se*] no more formal reality than the one it borrows from my thought, of which it is the mode."[98] For a reader like Malebranche, such a statement cannot be felt other than as dramatic, since Descartes asserts in the following lines that the *modus essendi objectivus,* which he identifies as the idea's objective reality, i.e., with the representationality that is the only foundation of the diversity of ideal contents, "is due to ideas by

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[93] See *Search*, 3.2.5, 433/228, concerning the assumption that "the soul [. . .] can to some extent be said to contain [objects] *eminently*, as the School would put it, i.e., in a way more noble and sublime than they are in themselves."

[94] AT VII, 45.

[95] *Search*, 3.2.5, 433/228 (see the repertoire of hypotheses of 3.2.1, § II).

[96] See *Elucidation Three, Elucidations*, 43/561 (Malebranche's italics).

[97] The repudiated modifications are here considered from the point of view of the ontological dimension (modes inherent in a substance) of their psychological status (modes of the thought). Concerning the "anti-psychologism" of Malebranche's doctrine of ideas, see N. Jolley, *The Light of the Soul. Theories of Ideas in Leibniz, Malebranche and Descartes*, (Oxford: Clarendon Press, 1990), Ch. 4.

[98] AT VII, 41: "[. . .] talem esse naturam ipsius ideae ut nullam aliam ex se realitatem formalem exigat praeter illam quam mutuatur a cogitatione mea, cujus est modus."

their own nature."[99] In Malebranche's view, the Cartesian "inherence pattern",[100] insofar as it promotes objective reality as intrinsic to a mode *qua* mode, vitiates the representationality of the idea and is radically prejudicial to the logical possibility of any judgment. Only ideas understood as real existents can constitute the subject terms of attributive propositions about external things. Only they can support the notion of objective reality.

5 God and the Heteronomous Perception of Bodies

There is no dilemma.[101] The mind cannot know properties of material things by contemplating its own diverse modalities. Malebranche writes in the fifth book of *The Search after Truth*: "man's mind [. . .] does not see in itself things that are distinguished from itself."[102] Hence it is clear that the representationality of ideas requires that ideas should not be confounded with thoughts. Representation of material things is performed by the only being in which these things are and are seen *in essendo*: God.[103] If external things, which are immediately imperceptible, are indirectly perceptible by means of their ideas, it is because they have a prior visibility that does not differ from their vision *by God.* The reason why bodies are perceptible is because they are first visible insofar as, from all eternity, God sees them "within Himself [. . .] by considering His own perfections, which represent them

[99] AT VII, 42: "iste modus essendi objectivus competit ideis ex ipsarum natura." For the equivalence between objective reality and representationality, see 40: "quatenus una [idea] unam rem, alia aliam repraesentat, patet easdem esse ab invicem valde diversas."

[100] For this expression, see T. M. Lennon, "The Inherence Pattern and Descartes' *Ideas", Journal of the History of Philosophy*, 12:1 (1974).

[101] The only dilemma in *The Search*'s third book might occur between the Malebranchian hypothesis and the innatist one (namely, the third in the repertoire of 3.2.1 § II, the one that is developed in 3.2.4). But 3.2.6 provides a series of reasons for not holding that the innatist hypothesis makes a dilemma with the vision in God-hypothesis (see 437–438/230–231, etc.). The alternative is first defeated by the principle of the absolute simplicity of God's ways: the thesis that "God never does anything uselessly and without reason" is necessary to dismiss innate ideas. However, this very principle gives only a moral certainty, not a metaphysical one, of the irrelevancy of innatism. In the 1678 edition of *The Search after Truth*, Malebranche underlined that he did not "absolutely" reject the hypothesis of a divine creation of "an infinity of infinite numbers of beings representative of objects" within every created intellect, and he gave then the principle according to which God does nothing in vain as the reason for reasonably disbelieving this metaphysical possibility (see Rodis-Lewis edition, 3.2.6, 438 note a). In 3.2.6, the assumption that, by creating all bodies "with extension alone" (438/230), God wills that created minds can see "what in Him is related to and represents these things" (438/231), has thus to be deemed from the point of view of its capacity to deny the verisimilitude of the innatist hypothesis and to restore God's *potentia* in its true rights.

[102] *Search*, 5.5, 168/364.

[103] The key is given by the very *modus essendi* of created beings. This point is emphasized in the 1678 edition (see Rodis-Lewis edition of *Search*, 3.2.6, 442 note a: "every creature *subsists but by* [*God*]").

to Him."[104] This divine knowledge of the essences of bodies amounts to a divine self-knowledge. God's ideas of material things "are not different from Himself."[105] Thus, the ultimate foundation of the perceptibility of external things cannot be other than their very status as created things, inasmuch as God creates them, because he knows their eternal exemplars or forms.[106] Descartes is wrong when he takes, in his *Tertiae Responsiones,* the philosophical notion of idea as a mere starting point for a derived notion, got by a transposition of the "forms" into the human mind. In so doing, he gives the external things a wrong double existence: an existence outside, *extra intellectum* (their actual or formal reality, which cannot be transferred in the mind), and an existence in the mind (their reality as things represented by ideas, i.e., their existence according to "iste essendi modus, quo res est objective in intellectu per ideam").[107] This is not a good distribution of the double being of an external thing that exists, on the one hand in a divine exemplar idea and, on the other hand in the world, but not in the human mind. External things do not exist objectively in the human mind, and ideas are not in the created intellect. From Malebranche's standpoint, the Cartesian transition from an idea's objective reality to the formal reality of its extramental cause as to its archetype ("instar archetypi"),[108] makes no sense: the idea is in God, and the objective reality is itself the archetype of the formal reality of any material thing created *extra Deum*. Descartes contends, in his *Primae Responsiones,* that the idea of the sun is "the sun itself existing in the intellect, not formally indeed, as it exists in the heavens, but objectively [. . .]."[109] But his intelligible sun is not presumed to be where it ought to be, namely in God the creator who sees all bodies "by considering the perfections He contains to which they are related."[110] This divine inner contemplation, which is proven in *The Search'*s third book (3.2.5) to be necessary to the divine creation of all beings, gives the key to the only likely hypothesis (the *vision en Dieu*-hypothesis) concerning the perceptibility of external objects. Thus, the "first sun" which is intimately united with the soul or which we "immediately see", according to Chapter 14 of *The Search*'s first book, cannot serve as an illustration of the Cartesian meaning of objective reality.

In Malebranche's view, the primary vision of bodies – their vision *by God* – is architectonic. It provides the law of the perception of external things, which involves the intellectual vision of intelligible objects. The mind does not perceive material things in space. It sees them "as they are in themselves", "in God's ideas", i.e.

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104 *Search*, 3.2.5, 435/229. See *Elucidation Ten*, *Elucidations*, 148/624: "God, then, contains bodies within Him in an intelligible way. He sees their essences or ideas in His wisdom [. . .]."
105 *Search*, 3.2.5, 434/229.
106 Of course, the topic is Augustinian: see for example *De Trinitate* XV.13 (God "does not know all his creatures [. . .] because they are, but they are because he knows them").
107 *Meditatio Tertia*, AT VII, 41. See *Praefatio ad lectorem*, AT VII, 8; *Primae Responsiones*, AT VII, 102 ("esse objective non aliud significat quam esse in intellectu eo modo quo objecta in illo esse solent"); *Secundae Responsiones*, AT VII, 161 ("Per *realitatem objectivam* ideae intelligo entitatem rei repraesentatae per ideam, quatenus est in idea").
108 *Meditatio Tertia*, AT VII, 42.
109 *Primae Responsiones*, AT VII, 102.
110 *Search*, 3.2.6, 437/230.

it perceives them "in the perception of God's perfections that represent them."[111] The mind's perception of a body is the mind's vision of an idea of/in God, an idea that does not at all modify divine substance.[112] The successive commands: "Close your eyes!", "Open your eyes!" might constitute a repeated test of the accuracy of Malebranche's hypothesis,[113] because opening the eyes makes no difference. The perceptual scene has not changed. What I see is not what I look at (that is to say, what is under my eyes, or the object of the sensible vision),[114] but I am always what might be called a visioner[115] of the ideas or essences of bodies perceived. The *Elucidation Six* stresses the point: "the bodies we look at when we open our eyes are quite different from the ideas that represent them and that affect us."[116] The perception of external bodies is fundamentally the vision of their essences by the pure intellect. The perceiving mind cannot be but the mind described in the opening part of *The Search*'s third book, the mind "as it is in itself and without any relation to the body to which it is joined."[117] Therefore, the perceptibility of material things is for the mind the strict correlate of its "faculty of knowing external objects without forming corporeal images of them in the brain to represent them to itself."[118] Perception is freed from any application of the mind to what is only spatially present to it or only united with it according to the mind-body union. Thus, the hypothesis of the vision in God is the best way of reworking the Cartesian notion of the intellectual perception of a body in *Meditatio Secunda*.[119] It is the most reliable foundation for the distinction between a purely spiritual vision of the soul, and the modifications of the soul that refer to physical states (the various states of the brain with which the soul is united).

Perception of external things owes its very possibility to intellectual vision as its *a priori* condition. Ideas of/in God constitute the archetypal intelligible world[120] upon

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111 *Search*, 5.5, 168/363–364.

112 See *Elucidation Ten, Elucidations*, 149/625: "the Infinite Being is incapable of modifications."

113 This test is used by Malebranche as a means of eliminating the innatist hypothesis. The soul created with all the beings representative of external things within itself could not know, "when it opens its eyes in the countryside", which ideas it ought to choose within its representational "store" in order to perceive the diverse bodies around it. Such a choice would necessarily be *sine ratione* (see *Search*, 3.2.4, 431/227).

114 As for ocular or sensible vision and its errors about the geometrical properties of bodies, see *Search*, 1.6–9.

115 I do not say "a visionary perceiver", though in *Elucidation Ten*, Malebranche contends that he prefers to be called "a visionary" rather than to concede that bodies themselves "enlighten" the mind (see 613/128).

116 See *Elucidation Six, Elucidations*, 65/575.

117 *Search*, 3.1.1, 381/198.

118 *Search*, 3.1.1, 381 note a/198. See *Elucidation Ten, Elucidations*, 149/625: "the soul can see only the sun to which it is immediately joined [*unie*], only that sun that like it occupies no place."

119 AT VII, p. 31.

120 As for the identification between the representation of bodies within God's perfections and "the intelligible world", see *Search*, 3.2.5, 434/228 (the hypothesis of the vision of everything within the soul's own perfections amounts to consider the soul "as an intelligible world") and 3.2.7, § II, 450/237 ("only God contains the intelligible world, where the ideas of all things are located").

which material beings are created. Access to this intelligible world is not in a human being's own power. It requires the immediate illumination or enlightenment of the soul by divine wisdom. What makes perception possible is therefore a heteronomous vision of bodies. The mind "sees" bodies because God wills that the exemplar ideas representative of bodies "should be revealed to us."[121] The claim that "not only could we see nothing but what [God] wills that we see, but we could see nothing but what He makes us see" is the Malebranchian assertion of the inseparability between the mind's direct acquaintance with an object and the mind's absolute dependence upon divine aid. Malebranche's main contention in his *Search after Truth* is that "for the mind to perceive an object, it is absolutely necessary for the idea of that object to be actually present to it."[122] But, according to him, the representation of an object by an idea (i.e. the representationality of this idea) and the presence of this representational idea to the mind (i.e. its representation to us) must be distinguished. The representationality of an idea has a theological nature. Its epistemic function for man's mind is only secondary. The representational idea is not a bare epistemological proxy for the external object. In Malebranche's view, perception presupposes a dyadic structuring of representation: the representation to us of external things is only the second element of a structure which first involves the representation of these things in/by their eternal exemplars. As was announced in *The Search*'s first book, the most thoroughgoing analysis of perception can thus be summarized by saying that "ideas that represent creatures to us are but the perfections of God that correspond to these creatures and that represent them."[123] The representationality of ideas for the mind is based on what might be called a proto-representationality, the representation of bodies in God's perfections. It is with respect to this proto-representationality that Malebranche feels entitled to say in 1678 that God, who is "*now*"[124] the only being able to "*penetrate* the mind", and the only one to be perceived immediately and directly, is "*even perhaps*" the only one that "can enlighten our mind with His own substance."[125] Indeed, there would be no presence of any object to the mind, were God not "through His presence [. . .] in close union with our minds."[126] Without this

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See likewise 5.5, 169/364: "God [. . .] sees in Himself, in the intelligible world He contains, the material and sensible world He has created."

[121] *Search*, 3.2.6, 439/231 (see also 437/230: "the mind can see God's works in Him, provided that God wills to reveal to it what in Him represents them"). God's will gives thus a further argument against the innatist hypothesis: on the view that "all the ideas of things [are] present to [the] mind" (p. 439/231), the creature's dependence on its Creator would be too weak.

[122] *Search*, 3.2.1, § I, 414/217.

[123] *Search,* 1.14, § II, 157/68.

[124] See *Search*, 3.2.1, § I, 416/218: Malebranche leaves open the possibility of our mind's direct and immediate perception of other minds "when order and justice reign, and we are delivered from the captivity of our body."

[125] *Search,* 3.2.7, § II, 449 note b/236–7.

[126] *Search*, 3.2.6, 437/230. See also 446/235: "minds perceive everything through the intimate presence of Him who comprehends all in the simplicity of His being."

spiritual presence, which excludes spatial presence,[127] nothing can be present to us. The immediate presence of God as the all-comprehensive substance, including the representational ideas of all things, gives the ontological guarantee of perceptual knowledge: "all beings can be present to our mind only because God [. . .] is present to it."[128] The perceptual acquaintance, insofar as it is a direct acquaintance with representational ideas in/of God, and even with God, reaches thus the most valuable epistemic state.

So, with Malebranche, perception is contemplative, or it is not. The immediate imperceptibility of external things cannot be compensated for by ideas as weak entities, merely reified so that they might be representational. It is compensated for by substantial beings, which are representative *in se*, non-modal beings that do not differ from God himself. Let us return to the instance of the sun in Chapter 14 of *The Search*'s first book. What do I perceive when I open my eyes at sunrise? It is not the sun that I look at, but an objective reality. As for my sensations of light and colour, they are mere modifications of my soul, which cannot represent the sun in the heavens. This is what Malebranche says about sense perception in the third book of *The Search*: "When we perceive something sensible, two things are found in our perception: *sensation* and pure *idea*. The sensation is a modification of our soul, and it is God who causes it in us [. . .]. As for the idea found in conjunction with the sensation, it is in God, and we see it because it pleases God to reveal it to us."[129] On the one hand, the connection between a sensation and an external object is independent of this object (the material thing does not cause the mind's modification). On the other hand, the pure intellect does not contemplate the external object, since the only externality to it is that of the divine exemplars of things. Perceptual knowledge seems to be at the top of cognition, thanks to God, but *who has stolen the external object?* This is the beginning of a new story, whose narrator will be Antoine Arnauld.

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[127] This leaves room to a comparison between the Malebranchian notion of our mind's immediate union with the Word of God (see *Search*, 3.2.6, 446/235 and 3.2.8, § I, 457/241) and the Augustinian notion in *De magistro* of the intimacy of the *verbum in corde*.
[128] *Search*, 3.2.6, 440–441/232.
[129] *Search*, 3.2.6, 445/234.

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Locke on the Intentionality of Sensory Ideas

Ralph Schumacher

1 Introduction

The theory of ideas is the foundation of Locke's account of human understanding. Whatever perceptual cognition we have of external objects, it involves immediate awareness of sensory ideas. Since the direct perception of sensory ideas enables cognizance *of* those objects, the question arises of how simple ideas of sensation contribute to the mind's awareness of external things. What is it in virtue of which a perceptual state or act is directed to an external object, according to Locke, and what role do simple ideas have in this context?

Currently, there are two competing interpretations. John Yolton, on the one hand, holds that ideas, as such, are intrinsically intentional; it is their nature as contents of immediate awareness to represent, to be "of" things.[1] According to Yolton's interpretation, Locke's notion of idea is largely the same as the Cartesian doctrine as explicated by Arnauld. Hence, Locke held ideas to be signs or meanings that *exhibit* what they signify in immediate awareness. Yolton's aim is to show that Locke's model of idea is consistent with direct realism. Michael Ayers, on the other hand, argues that the simple ideas of sensation are "blank sensations"; they represent solely in virtue of the relational fact that they are caused in us by objects acting on our sensory organs. As the contents of immediate awareness, the ideas are bereft of representational character.[2] Hence, sensory ideas have no intrinsic intentionality at all. On the contrary, sensory ideas have representational content in virtue of the relational fact that they are caused in us by objects acting on our sensory organs. According to Ayers, Locke argues that the mind finds it evident that its sensory ideas are effects that come from without and takes its ideas to refer to their external causes. This interpretation supports an indirect realist understanding of Locke's theory of sensory perception.

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[1] J. Yolton, *Perceptual Acquaintance from Descartes to Reid* (Oxford: Oxford University Press, 1984), 88–115.
[2] M. Ayers, *Locke, Volume I: Epistemology* (London: Routledge, 1991), 38–42.

S. Knuuttila, P. Kärkkäinen (eds.), *Theories of Perception in Medieval and Early Modern Philosophy,*

Despite their differences, both interpretations are based on the assumption that Locke actually presents a single unified theory of the intentionality of sensory ideas. But does he really succeed in establishing a coherent unified explanation of the representational features of sensory ideas? Are there not fundamental differences in the intentionality of our ideas of primary and secondary qualities? To answer this question I am going to examine Locke's doctrine that all simple ideas are real. This is his basic theory of sensory representation.

Our knowledge of the sensible qualities of things essentially contains knowledge of how these qualities appear to us under different perceptual conditions. Hence, if I understand the colour term "yellow", for instance, and if I am thus able to identify yellow lemons in daylight, then I also know that they appear differently under other lighting conditions – for example, that they look green to me under blue light. This is not only true of secondary qualities like colours, but also of primary qualities like shapes. Accordingly, my knowledge of the predicate "straight" not only includes knowledge of how straight sticks, for instance, look to me under normal perceptual conditions, but also knowledge of how they look to me when they are held into water. Without this knowledge I would not be able to perceive colours and shapes under different perceptual conditions as *constant* qualities of things.

The different appearances of things under different perceptual conditions have in common that they all are produced in us according to natural laws by the effects of external causes on our perceptual apparatus. For this reason, there is *no metaphysical difference* between the natural facts that give rise to impressions of yellow or to impressions of green, respectively, if lemons are presented to us either in daylight or under blue light. Since there is no difference, with regard to the reality of their external causes, between the impressions of qualities that are real and of qualities that are merely apparent, both could be used to distinguish things by the qualities we perceive them to have under different perceptual conditions. Although we usually rely on the real properties of things for drawing distinctions between them, it is also perfectly possible to distinguish them by their apparent properties if we take into account the specific conditions under which we perceive them. Hence, it is equally possible either to distinguish white billard balls from yellow lemons in daylight, or to distinguish billard balls which look blue under blue light from lemons which look green under the same lighting conditions. Moreover, for many practical purposes it is entirely irrelevant whether the criteria by which we draw distinctions between things reveal to us anything about the nature of the properties in question. For example, we do not need scientific knowledge of the physical constitution of colours to distinguish yellow lemons from white billard balls. What counts is only the stable and thus reliable correlation between our criteria and certain real differences in things.

It is the central aim of Locke's theory of the reality of simple ideas to account for these facts concerning our use of the impressions of real and of apparent properties of things in order to detect real differences among them. In this presentation I want to examine how Locke's view of the individuation of simple ideas fits in with his conception of their reality.

2 The Reality of Simple Ideas

According to Locke, those ideas are real which "have a foundation in nature", "a conformity with the real being and existence of things", "to which they are tacitly referred as to their archetypes" (II, xxx, 1).[3] Hence, ideas are real if they actually correspond to the entities which they are supposed to stand for. With regard to the reality of *simple* ideas of sensory perception, Locke intends to provide a description which is sufficiently general to cover the ideas of primary qualities as well as those of secondary qualities. For this reason, he emphasises that the reality of simple ideas does *not* require any relations of resemblance to exist between ideas and their objects – as these are required only in case of the ideas of primary qualities. Instead, he confines the requirements to the steady correspondence of ideas with their external causes which is common to both the ideas of primary and secondary qualities. According to this account, a necessary and sufficient condition for being a real simple idea is that ideas steadily correspond to their external causes.

Locke's view that all simple ideas are real is the consequence of his claim that we find simple ideas in our minds and his empiricist thesis that we are unable to produce these ideas by ourselves. For this reason, the presence of simple ideas in the mind always indicates the presence of certain external causes which give rise to these ideas. However, it is important to note that the reality of simple ideas does not mean that these ideas necessarily indicate the presence of *real properties* of things. Instead, since also simple ideas of apparent qualities of things have external causes and, therefore, are real, they merely indicate the presence of *real external causes*. Thus, if I see a straight stick, for instance, which is held into water, my simple sensory idea of a broken shape is real because it is produced by external causes, namely by certain effects of the light on my eyes according to the optical laws of refraction. Only if we presume that Locke implicitly presupposes that the simple ideas he talks about are perceived under *normal* perceptual conditions, it might seem plausible to think that the reality of simple ideas implies that they stand for real properties of things.

However, the issue is further complicated by his considerations concerning the influence of judgments on perceptual content. These thoughts support the view that even simple ideas perceived under normal perceptual conditions might stand for merely apparent properties of things (II, ix, 8–9). To illustrate the influence of judgments on perceptual content, Locke describes the different stages of the visual perception of a uniformly coloured globe. The idea which we immediately get is that of a flat circle with a variety of shadows and colours. But since we have learnt from experience that this sort of idea is caused by a globe, we interpret the idea of the unevenly coloured circle as the idea of a uniformly coloured globe. Consequently, *we have to learn to perceive the real properties of things*. Therefore, even if we perceive simple ideas under normal perceptual conditions, this does not guarantee that

[3] All Locke references are to his *Essay Concerning Human Understanding,* ed. P. Nidditch (Oxford: Clarendon Press, 1975).

all of them stand for real properties of things. This supports the view that it might be more plausible to understand Locke as saying that simple ideas just indicate the presence of certain powers inherent in things.

A further important aspect of simple ideas is their role as marks of distinctions in things. Although simple ideas do not *represent* their external causes in virtue of their being real, they stand as marks for these causes. Locke emphasises repeatedly that God established correlations between simple ideas and certain external causes in order to design simple ideas as marks of real differences in things (II, xxx, 2; II, xxxi, 2; II, xxxii, 14). There are several passages in the *Essay* which support the interpretation that simple ideas mark differences among *the real properties of things*. Locke maintains, for instance, that "they are real ideas in us, whereby we distinguish the qualities that are really in things themselves" (II, xxx, 2). In the same section he also talks about the "correspondence of simple ideas with distinct constitutions of real beings." Furthermore, Locke maintains that our simple ideas of colour are correlated with certain textures of things (II, xxxii, 14). If this interpretation were true, only simple ideas perceived under *normal* perceptual conditions could be used as marks of distinctions in things because only these ideas – at best – could stand for real properties of things. This reading gets additional support from passages in which Locke describes normal perceptual conditions by saying that simple ideas are produced in us according to "established laws and ways" (II, xxxii, 14).

However, since Locke defines the concept of the reality of simple ideas in a more general way which not only covers ideas of real properties, but also ideas of merely apparent properties, it would be implausible to exclude simple ideas of this second kind and to confine the marking function only to those simple ideas which stand for real properties. For this reason, it seems to be more adequate to read Locke as saying that simple ideas enable us to distinguish things *by their powers or dispositions*. According to this interpretation, these powers or dispositions are characterized by disjunctions of propositions which describe which simple ideas these powers give rise to under different perceptual conditions. Hence, lemons, for instance, possess the power or disposition to produce in our minds simple ideas of yellow in daylight, simple ideas of green under blue light, etc. Under the assumption of this disjunctive understanding of the concept of power or disposition, we could use *all* simple ideas as marks for distinguishing things by their response dispositions.

There are several passages where Locke argues that simple ideas stand for certain powers of things, and which can be regarded as supporting this interpretation. For example, he says that "simple ideas answer and agree to those powers of things which produce them in our minds" (II, xxx, 2), and that our concepts of secondary qualities "truly signify nothing, but those powers which are in things to excite certain sensations or ideas in us" (II, xxxi, 2). I think the decisive argument in favour of this interpretation can be drawn from Locke's justification of the claim that all simple ideas are adequate. According to his account, those ideas are adequate "which perfectly represent those archetypes which the mind supposes them taken from" (II, xxxi, 1). He argues that all simple ideas are adequate because all of them are real. However, this argument is valid only on the assumption that real ideas do not stand for real properties of things only, but that they stand for certain

powers. This interpretation is further supported by the fact that immediately after this argument, Locke presents the following example to illustrate his reasoning: the simple ideas of white colour and of sweet taste are real and thus adequate because they stand for certain powers inherent to the sugar by which they are produced in our minds. For this reason, I think that it is Locke's view that we use simple ideas to distinguish things not by their real properties, but rather by their powers.

3 How Do We Individuate Simple Ideas?

In the following I would like to examine Locke's view of the criteria of the identity of simple ideas: How do we individuate simple ideas? What makes a simple idea, an idea of red, for instance? Let us start with the examination of Locke's account of the individuation of simple ideas of secondary qualities. He repeatedly maintains that simple ideas are "sensations", "real distinguishing characters" and "appearances", which are immediately perceived by us, and which could be used as marks for distinguishing things by their powers (II, xxx, 2; II, xxxi, 2; II, xxxii, 14–15). Now, it is important to note that drawing distinctions between the powers of things by using simple ideas as marks of these powers presupposes *that we are able to individuate these immediately perceived appearances independently of their reference to their external causes*. This is required for simple ideas to be used as marks of distinction because before we can project the differences among our simple ideas on certain external objects, we must be able to identify certain sorts of simple ideas and to distinguish them from other sorts of simple ideas. Hence, I must be able to understand the difference between the simple ideas of red and green, for instance, without having any knowledge about the external causes of these ideas. Thus, since the knowledge of the reference of simple ideas to their external causes is supposed *not* to play a role in their individuation, we have to individuate them by their non-representational or phenomenal content. According to this view, it is some intrinsic property which, by constituting its appearance or phenomenal content, makes a simple idea, an idea of red, for instance. Locke illustrates this assumption of the identity of simple ideas being independent of their reference to external causes by his thought-experiment of the person with the inverted colour spectrum who perceives ideas of yellow when seeing violets, and ideas of blue when seeing marigolds (II, xxxii, 15). The aim of this thought-experiment is to show that even if ideas of blue and of yellow stand for entirely different powers of things as they usually do, they still are the same simple ideas of blue and of yellow.

Since, according to Locke, we individuate the simple ideas of secondary qualities by their phenomenal content, we can rely on them in order to individuate the secondary qualities for which these ideas stand. Therefore, our understanding of concepts of secondary qualities is based on our ability to recognize simple ideas by their phenomenal content. According to this view, the secondary quality of redness, for instance, has to be defined as that power in things which will produce simple ideas of red in the minds of human perceivers under *normal* perceptual conditions.

This definition accounts for the fact that things look different to us under different perceptual conditions because it is perfectly possible that the same power which gives rise to ideas of red under normal conditions like daylight will produce other ideas of colour under different conditions.

This internalist model, according to which simple ideas are not only individuated by their phenomenal content, but are also used for the individuation of certain powers of things, might be regarded as a convincing interpretation of Locke's understanding of secondary qualities. This internalist model also fits in with his view that it is unimportant for the marking function of simple ideas "whether they be only constant effects, or else exact resemblances of anything in the things themselves" (II, xxx, 2). This means that the simple ideas of secondary qualities can play their role as distinguishing marks although they, in themselves, have only phenomenal content and convey nothing with regard to the things they stand for. In particular, they do not have to give us epistemic access to the nature of the properties of things in order to serve us as marks of distinctions in things.

Now, the next question is whether this model is also a viable interpretation of Locke's account of the individuation of ideas of primary qualities. Is it really plausible to maintain that we individuate the simple idea of a straight shape, for instance, exclusively by its phenomenal content and entirely independently of its reference to properties of things without the mind? If this were true, it should also be possible to exchange the ideas of different shapes without any loss of identity, just as ideas of yellow and of blue are exchanged in Locke's thought-experiment of the inverted colour spectrum. For instance, it should be possible for a person to perceive a simple idea of a straight shape when seeing a straight stick held into water, and a simple idea of a broken shape when seeing a straight stick outside of the water. But this kind of exchange is excluded in the case of ideas of primary qualities because, according to Locke, these ideas are supposed to *resemble* their objects and, thus, are much more intimately related to the properties represented by them than ideas of secondary qualities are (II, viii, 15). For this reason, the ideas of primary qualities cannot be individuated independently of the properties of the things which they are referred to as representations. Thus, the internalist model fails with regard to primary qualities.

There is one further reason why this internalist model cannot account for the identity of simple ideas of primary qualities. According to Locke, certain primary qualities can be perceived by more than one sense (II, v). For example, we can perceive shape by sight as well as by touch. But if we individuate the ideas of primary qualities by their phenomenal content, it would not be possible for us to say that what is perceived by sight and by touch are the *same* ideas, because the phenomenal contents of visual and tactile perceptions are entirely different.

Therefore, it seems reasonable to assume an externalist interpretation of Locke's account of the individuation of simple ideas of primary qualities. While simple ideas of secondary qualities are individuated by their phenomenal content, simple ideas of primary qualities have to be individuated by their representational or intentional content. Hence, different persons perceive the same simple idea of a certain primary quality if their perceptual experiences have the same representational content. Thus, we have to presume that Locke regards primary qualities as natural kinds which can

be individuated independently of the ideas which they give rise to. Furthermore, we have to rely on the concepts of these qualities in order to individuate the ideas of them. Hence, before we can understand the concept of the simple idea of a straight shape, for instance, we must be able to grasp the meaning of the concept of a straight shape. According to this view, the simple idea of a straight shape has to be defined as that idea which objects with straight shapes will produce in our minds under *normal* perceptual conditions. This definition has the advantage of being able to account for misperceptions because it is perfectly possible for the same primary quality which under normal conditions will give rise to simple ideas of a straight shape to produce simple ideas of other shapes under non-standard conditions. According to this view, being caused by the primary quality F under normal conditions is *sufficient* for being a simple idea of F.

However, even this interpretation of Locke's understanding of the individuation of simple ideas of primary qualities is not without difficulties. There are two main problems:

1. The first problem is that Locke describes *all* simple ideas as sensations which are characterized by their "uniform appearance" (II, ii, 1). If we understand this appearance to be the phenomenal content of simple ideas, it has no function for the individuation of simple ideas of primary qualities because being an idea of a certain primary quality F entirely depends on its being produced in our minds by this quality under normal perceptual conditions. Consequently, it must be possible for two different human beings who both see the shape of a straight stick, for instance, to perceive two simple ideas with completely different "uniform appearances", which nevertheless are still ideas of the very same shape. However, this does not seem to be compatible with Locke's view that simple ideas of primary qualities *resemble* the properties represented by them because this rather supports the contrary view that there can be only *one* uniform appearance for each primary quality.
2. The second problem is more serious. It is related to the function of simple ideas as marks of distinctions in things. Distinguishing objects by certain marks generally presuppose that we are able to identify these marks *independently* of the objects for which they are supposed to stand. For example, if we intend to distinguish ripe strawberries from lemons by their colours as two kinds of fruit, we first have to be able to identify the colour red and the colour yellow independently of our knowledge of strawberries and lemons. This means that we must be able to identify the property of being red, for instance, independently of the property of being a strawberry. This is equally true for simple ideas. In order to use them as marks of distinctions in things, we have to be able to individuate them independently of our knowledge of the differences in things for which these ideas are supposed to stand. But if the externalist interpretation is true, this is the very condition which is not fulfilled. On the contrary, it is just the other way round. According to the externalist interpretation, we have to be able to individuate the primary qualities *before* we are able to individuate the simple ideas of primary qualities. Thus, we cannot identify these ideas without having some knowledge of what they represent. Hence, the ability to identify the simple

> ideas of primary qualities already presupposes that we know the primary qualities in question. Therefore, an essential condition for the use of simple ideas as distinguishing marks is not fulfilled. Although we may conceive of differences in things *by having, in our minds, ideas* of their different qualities, *we cannot use these ideas as marks of distinction* because we can only individuate these ideas if we already possess some knowledge of the primary qualities in question.

Perhaps these problems could be solved by assuming that Locke implicitly holds an *intentionalist view*.[4] According to this interpretation, the phenomenal content of sensory ideas *supervenes* on their intentional content. Hence, if two tokens of ideas of primary quality have the same intentional content, their phenomenal content will also be the same. Their intentional content thus *determines* their phenomenal content. Combining this intentionalist interpretation with the externalist view of the individuation of simple ideas of primary qualities would exclude the possibility that different perceivers who see the same shape perceive ideas with different "uniform appearances" because these appearances are determined by the intentional content of their ideas. In addition, we would also be able to account for the use of simple ideas of primary qualities as marks of distinctions in things because for each difference in the phenomenal content of these ideas there is a corresponding difference between the primary qualities represented by them. If, therefore, the intentionalist interpretation is true, it would be possible even in the case of ideas of primary qualities to meet the requirement that we have to be able to identify the marks of distinctions in things independently of the objects they are supposed to stand for because perceivers only have to be able to grasp the differences among the phenomenal contents of their ideas in order to draw distinctions between the primary qualities represented by them.

This intentionalist interpretation, however, is not convincing for the following three reasons: First, since the distinction between the intentional and the phenomenal content of sensory ideas is merely implicit in Locke, there is no direct textual support for this interpretation. Consequently, the major reason for adopting this interpretation would be that it helps to solve a certain problem within his theory. Second, this intentionalism would be restricted to the ideas of primary qualities because Locke's thought-experiment of the inverted spectrum supports the view that for him, the relation between the intentional and the phenomenal content of ideas of secondary qualities is entirely *contingent*. Third, this intentionalism would be further restricted to the perception of primary qualities by exactly one sense because Locke's considerations regarding the Molyneux question show that for him, the visual and the tactile idea of a particular shape differ in their phenomenal contents although they have the same intentional content.[5] Thus, his position could not be described as an intermodal intentionalism. For all these reasons, it seems rather

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[4] My remarks on intentionalism are based on A. Byrne's paper "Intentionalism Defended", *Philosophical Review* 110 (2001), 199–240.

[5] For the Molyneux Question, see R. Schumacher, "What are the Direct Objects of Sight? Locke on the Molyneux Question", *Locke Studies* 3 (2003), 41–61.

unlikely that Locke should hold an intentionalist position with regard to the ideas of primary qualities.

So we come to the startling conclusion that within Locke's theory of the reality of simple ideas, there seems to be no place for the simple ideas of primary qualities. The internalist interpretation, on the one hand, is in conflict with his view that due to their resemblance with their objects, the ideas of primary qualities, unlike ideas of colour in the thought-experiment of the inverted spectrum, cannot be exchanged without loss of identity. The externalist interpretation, on the other hand, is not compatible with the role of simple ideas as marks of distinctions in things because this interpretation is not compatible with the individuating ideas of primary qualities independently of the objects for which they are supposed to stand.

Now, what is the source of this problem? It is not Locke's representationalist theory of the mind according to which cognitive processes like perceiving and thinking involve mental representations which by their intentional or representational content refer to objects. Instead, it is one of Locke's epistemological assumptions concerning the relation of immediate perception between the mind and simple ideas: the assumption that ideas are not just mental representations, but objects of direct awareness. Hence, since Locke regards simple ideas as objects of direct awareness, we have to individuate them by their different appearances or phenomenal contents before we can relate them to the properties and powers of things. On this epistemological assumption, Locke is tempted to think that simple ideas could be used as marks which stand for real differences in things. However, as we have seen, this conception of simple ideas as marks of distinctions in things is deeply problematic because it is the very reason why there is no place for the simple ideas of primary qualities within Locke's theory of the reality of simple ideas. So he should have distinguished more carefully between, on the one hand, the claim that we conceive of differences in things *by having, in our minds, ideas* of their different qualities and, on the other hand, the claim that we distinguish things *by using our ideas of their qualities as marks of distinction*. While the first claim is unproblematic, the second claim results in our problem, since it involves the assumption that ideas are objects of direct awareness which could be used as marks of distinction.

Why does Locke hold this problematic epistemological assumption? One important reason seems to be that it enables him to explain why sensory perception cannot reveal to us the nature of secondary qualities. Just like Descartes, Arnauld and Malebranche before him, Locke also maintains that sensory perception cannot provide any information about the nature of secondary qualities, but only information about the sensations which these qualities give rise to in the minds of human perceivers (II, viii, 14–17; II, xxxi, 2; II, xxxii, 14–15). Hence, although we grasp the content of the sensations caused by secondary qualities, the nature of these properties themselves remains completely unknown to us. Thus, sensory experience of these qualities merely informs us as to whether or not certain things are beneficial or harmful to us. Locke's view of simple ideas being mere marks of distinction offers an explanation why sensory perception of secondary qualities can only provide this kind of pragmatic information, but no knowledge about the real constitution of things.

The problems of Locke's theory of the intentionality of sensory ideas are the result of his attempt to integrate all simple ideas into a single unified model. However, the way the sensory ideas of primary qualities direct our awareness to the properties of external things is fundamentally different from the way this is achieved by the sensory ideas of secondary qualities. On the one hand, to be immediately aware of an idea of a primary quality is to be directly cognizant of a perceptual object. Thus, we have to regard the ideas of primary qualities as intrinsically intentional because they direct our awareness immediately to the objects for which they stand. On the other hand, when we perceive an idea of a secondary quality we immediately grasp only a certain phenomenal content. Therefore, further cognitive operations are required to provide these ideas with representational content. According to Locke, it is evident to the mind that the ideas of secondary qualities are effects which come from without and, thus, refer to their external causes. Hence, ideas of secondary qualities have to be regarded as not being intrinsically intentional because they immediately direct our awareness only to certain phenomenal qualities, but not to the powers of things for which they stand. This is the reason for Locke to distinguish between secondary qualities "as they are perceived by us" and "as they exist in things" (II, xxxi, 2). Only this second kind of ideas can be regarded as marks of distinctions in things. Locke is having a problem because he neglects the differences among these different kinds of sensory intentionality and, thus, tries to assign the marking function to *all* simple ideas of the senses.

4 Arnauld and Malebranche on Sensory Intentionality

Just like Locke, Arnauld and Malebranche also hold that the sensory perception of secondary qualities cannot give us epistemic access to the real constitutions of things, but merely informs us as to whether or not certain things are beneficial or harmful to us. However, within their theories, Locke's particular problem regarding the individuation of ideas does not arise because their approach is different from his in several fundamental respects. Arnauld, to start with, does not only regard the ideas of primary qualities, but also those of secondary qualities as intrinsically intentional. An additional difference between his theory and Locke's theory is that Arnauld's model of mental intentionality is not a representationalist one. He maintains, on the contrary, that an idea is nothing but the object of thought or perception insofar as it exists in the mind. Hence, mental states have intentional content because their objects themselves are somehow present in the mind. This model is based on the scholastic distinction between two modes of existence, namely the formal and the objective reality of objects.[6] Accordingly, whereas the formal reality of an object consists in its existence in the physical world, its objective reality consists in its

[6] For the scholastic theory, see D. Perler, "Inside and Outside the Mind – Cartesian Representations Reconsidered", in: R. Schumacher (ed.), *Perception and Reality. From Descartes to the Present* (Paderborn: mentis, 2004), 69–87.

existence as an object of thought or perception within the mind. Since one and the same thing can exist in two different modes, namely within and without the mind, Arnauld holds an externalist view of the individuation of ideas; an idea is nothing but a thing or a quality insofar as it exists in the mind. Hence, since all ideas are intrinsically intentional, ideas of primary qualities are supposed to differ from ideas of secondary qualities only *gradually* with respect to the way in which their content is presented to the mind. Accordingly, the ideas of secondary qualities can give us only practical information because the senses do not present them in a clear and distinct manner – as reason presents to us the ideas of primary qualities – but only in an obscure and confused manner. Our perceptions of colour, for instance, are obscure and confused to the extent that we do not know how the particles on the surface of a body have to be arranged so as to be the cause of our perceptions of the colour red. Nevertheless, for each physical disposition of this kind there is a one-to-one correlation between the corpuscular arrangement and the perceived colour, since otherwise our colour perceptions would not, according to Arnauld, genuinely represent qualities of objects. Thus, a further consequence of this approach is that it is not possible to exchange ideas of colours, for instance, without loss of identity. For Arnauld, therefore, spectral inversion is impossible.[7] For this reason, he rejects the invertepectrum hypothesis which was already presented by Malebranche in his *Search After Truth* fifteen years before the publication of Locke's *Essay*.[8] So Arnauld avoids Locke's problem concerning the individuation of ideas of primary qualities because he maintains a unified theory of mental intentionality which holds true for both the ideas of primary and secondary qualities. Since ideas, according to Arnauld, are not ontologically distinct from their objects, the Lockean concept of ideas as marks of distinctions in things has no place at all within his theory.

In contrast to Arnauld, Malebranche regards the perceptual experiences of primary qualities as fundamentally different from the sensations of secondary qualities. According to him, only the perceptions of primary qualities have intentional content, whereas sensations of secondary qualities lack intentionality. Since ideas, according to Malebranche, are the only vehicles of mental intentionality, we are supposed to have only ideas of primary, but not of secondary qualities. Like Berkeley, Malebranche also maintains that secondary qualities are nothing but sensations which exist in the mind. Hence, the content of our sensory experiences of these qualities is not an intentional, but just a phenomenal one. Malebranche holds a projectivist theory of the perception of secondary qualities according to which we are led by

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[7] Antoine Arnauld, *On True and False Ideas*, trans. E. J. Kremer (Lewiston, NY: Edwin Mellen Press, 1990), Chapter 16.

[8] Nicolas Malebranche, *The Search After Truth*, trans. T. M. Lennon and P. J. Olscamp (Cambridge: Cambridge University Press, 1997), book I, Chapter 13, Section 5. Locke was well acquainted with the debate generated by Malebranche's *Search*. In Locke's library were several editions of Malebranche's *Search*, Foucher's *Critique de la Critique de la Recherche de la Vérité* (1675), Malebranche's *Traité de la Nature et de la Grace* (1680), and Arnauld's response *Des Vrayes et des Fausses Idées* (1683). See J. Harrison and P. Laslett, *The Library of John Locke* (Oxford: Clarendon Press, 1965), 87–88.

so-called "natural judgments" to regard secondary qualities as real properties of things. Hence, we habitually attribute our own sensations to external objects. Thus, the theories of Locke and Malebranche have in common that they attribute the individuation of ideas and sensations of primary and secondary qualities to entirely different principles. Malebranche, however, steers clear of Locke's problem because he is fully aware of the differences among our perceptions of these two kinds of ideas and, therefore, does not attempt to integrate them into a single unified theory on mental intentionality.

5 Conclusion

How can we avoid Locke's problem within a Lockean framework? The most direct way would be to give up both the claim that simple ideas have a marking function and the underlying epistemological premise, namely that ideas are objects of direct awareness which can be individuated independently of their reference to their external causes. Hence, Locke's view of perception would be restricted to the representationalist view that our sensory perception of the primary and secondary qualities involves ideas or mental representations which constitute mental intentionality. Under this assumption it would still be possible to maintain that all simple ideas are real because they would still correspond to their external causes.

The assumption that sensory ideas are objects of direct awareness which could be individuated independently of the objects for which they are supposed to stand and which could be used as marks of distinctions in things is not only responsible for problems within Locke's theory. In addition, it is also a source of problems in recent debates concerning the nature of secondary qualities. Let us consider dispositionalist theories of colour like the approaches of Mark Johnston and Christopher Peacocke, for instance.[9] These theories are essentially based on the assumption that colour perceptions can be individuated independently of their reference to external entities, such as the surface properties of real physical things. Accordingly, if we define the conditions for an object's being yellow in the following way:

> x is yellow if and only if normal human perceivers standing in certain relations R to x in certain kinds of perceptual circumstances C would get perceptions of yellow,

it must be possible to identify the colour perceptions which stand on the right side of this biconditional independently of the object's colour which stands on its left side. The colour perceptions must be identifiable independently of the perceiver's ascribing colour to any physical objects because otherwise knowledge of the colours of things would be already presupposed. Since several convincing arguments support the view that this kind of internalist individuation of colour perceptions is not plausible, we have not only historical, but also systematic reasons for not attributing a marking function to sensory ideas.

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[9] M. Johnston, "How to Speak of the Colours", *Philosophical Studies*, 68 (1992), 221–263; C. Peacocke, "Colour Concepts and Colour Experience", *Synthese* 58 (1984), 365–382.

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