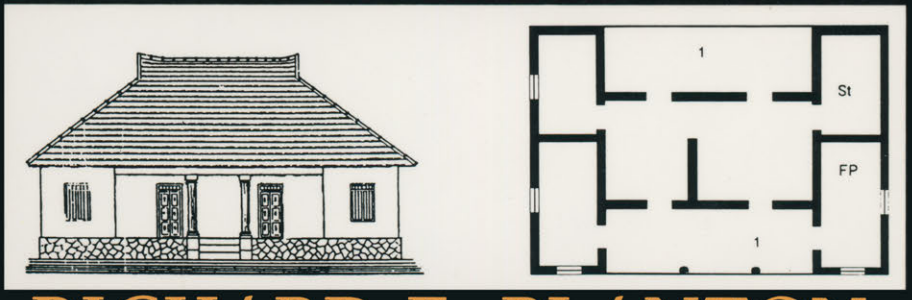
Interdisciplinary Contributions to Archaeology

Houses and Households

A Comparative Study



RICHARD E. BLANTON

Houses and Households

A Comparative Study

INTERDISCIPLINARY CONTRIBUTIONS TO ARCHAEOLOGY

Current Volumes in This Series:

THE AMERICAN SOUTHWEST AND MESOAMERICA
Systems of Prehistoric Exchange
Edited by Jonathon E. Ericson and Timothy G. Baugh

THE ARCHAEOLOGY OF GENDER
Separating the Spheres in Urban America
Diana diZerega Wall

EARLY HUNTER–GATHERERS OF THE CALIFORNIA COAST
Jon M. Erlandson

ETHNOHISTORY AND ARCHAEOLOGY
Approaches to Postcontact Change in the Americas
Edited by J. Daniel Rogers and Samuel M. Wilson

FROM KOSTENKI TO CLOVIS
Upper Paleolithic–Paleo-Indian Adaptations
Edited by Olga Soffer and N. D. Praslov

HOUSES AND HOUSEHOLDS
A Comparative Study
Richard E. Blanton

HUNTER–GATHERERS
Archaeological and Evolutionary Theory
Robert L. Bettinger

THE INTERPRETATION OF ARCHAEOLOGICAL SPATIAL PATTERNING
Edited by Ellen M. Kroll and T. Douglas Price

POTTERY FUNCTION
A Use-Alteration Perspective
James M. Skibo

RESOURCES, POWER, AND INTERREGIONAL INTERACTION
Edited by Edward M. Schortman and Patricia A. Urban

SPACE, TIME, AND ARCHAEOLOGICAL LANDSCAPES
Edited by Jacqueline Rossignol and LuAnn Wandsnider

Houses and Households

A Comparative Study

RICHARD E. BLANTON
Purdue University
West Lafayette, Indiana

SPRINGER SCIENCE+BUSINESS MEDIA, LLC

Library of Congress Cataloging-in-Publication Data

Blanton, Richard E.
Houses and households : a comparative study / Richard E. Blanton.
p. cm. -- (Interdisciplinary contributions to archaeology)
Includes bibliographical references and index.
ISBN 978-1-4899-0992-3 ISBN 978-1-4899-0990-9 (eBook)
DOI 10.1007/978-1-4899-0990-9
1. Social archaeology. 2. Dwellings. 3. Households. I. Title.
II. Series.
CC72.4.B57 1993
930--dc20 93-34651
CIP

ISBN 978-1-4899-0992-3

Preface

This book reports on a comparative study of peasant households and their houses, based on an analysis of published ethnographic and architectural sources from several world areas. The starting point for my research, however, was a single locality—the ancient Zapotec households of southern Mexico, in the Valley of Oaxaca. For more than a decade, my colleagues and I studied the evolution of prehispanic Zapotec society and culture from a regional archaeological perspective (Blanton 1978; Blanton et al. 1982; Flannery and Marcus, eds., 1983; Kowalewski et al. 1989). Within the various prehispanic periods of Oaxaca, major episodes of sociocultural change are evident, ranging from the evolution of chiefdoms to complex states, urbanism, and empire. Among our most intriguing discoveries is the fact that households changed considerably over time in size, structure, and function through this sequence (see, e.g., Flannery 1976). We often found ourselves asking: How did the changed behavior of households influence other aspects of society, and how were households, in turn, influenced by transformations in the larger system?

One of the most apparent sets of changes relates to material standard of living. The regional social structures of certain periods resulted in what appears to have been relatively poor living standards (particularly for rural households), whereas other structural arrangements seemed to distribute wealth more broadly. Why? I hoped to pursue this, and other problems related to variability in households, through a program of excavation of rural house remains. I concluded,

however, that such a project would be less productive than it potentially could be. Currently, our discipline's ability to engage in household-based research is limited due to shortcomings of method, theory, and comparative knowledge. Hence, I developed the project that is reported here, which presents a large comparative database derived from ethnographic and architectural sources, proposes new methods for comparative analysis of houses, and makes use of both the methods proposed and the data gathered in an evaluation of relevant theoretical propositions about houses and households.

My interest in households in ancient Oaxaca is one manifestation of an emerging household orientation in both archaeology and sociocultural anthropology (e.g., MacEachern, Archer, and Garvin, eds., 1989; Maclachlan, ed., 1987; Netting, Wilk, and Arnould, eds., 1984; Schmink 1984; Tringham 1991; Wilk, ed., 1989; Wilk and Ashmore, eds., 1988; Wilk and Rathje 1982; Yanagisako 1979). Although there are many approaches to household study to be found in these and numerous other sources inside and outside of anthropology, my main strategy for developing new methods and knowledge about households is to investigate comparatively the formal properties of the house itself, including floor plan, decoration, and so forth. This research tactic is justified in theoretical terms below, but a major reason for taking this direction is simply the lack of suitable method and theory in relevant disciplines. Hirth (1989: 443), for example, in his discussion of prehispanic households in Morelos, Mexico, points out that, although there are many techniques for the analysis of artifact distribution, too little emphasis has been placed on an understanding of the formal properties of the house itself. I hope this work will serve as a partial corrective to that deficiency.

In taking this approach, I touch upon many questions addressed by previous researchers interested in various aspects of households and houses, including archaeologists, sociocultural anthropologists, sociologists, and architects. I would include as examples: aspects of household size (e.g., Snow 1989), domestic cycle (e.g., Evans 1989), gender relations (e.g., Pellow 1988), symbolism of the house (e.g., Moore 1986), the social structure of complex households (e.g., Healan 1989; Storey and Widmer 1989), household decision making (e.g., Wilk,

ed., 1989), material standard of living (e.g., Smith 1987), decoration and style (e.g., Hodder 1982: 185–191; Wobst 1977), the use of domestic space (e.g., Kent, ed., 1990), consumer behavior (e.g., Douglas and Isherwood 1979), and the communicative aspects of the built environment (e.g., Rapoport 1990).

Acknowledgments

The work reported on in this book would not have been possible without the support of several institutions and many individuals. The major funding came from the Cultural Anthropology Program of the National Science Foundation (BNS-8615233). I thank its director, Stuart Plattner, and cultural anthropology panel members for their useful comments. I was also aided through the resources of the Department of Sociology and Anthropology, Purdue University, and three department heads, Robert Perrucci, Reece McGee, and Dean Knudsen. I made use of the library resources of Purdue University; the University of California, Berkeley; the University of Chicago; Cornell University; Indiana University, Bloomington; the University of Michigan; and the University of Pennsylvania. I am very indebted to the office of interlibrary loan, Purdue University. Therese Kross worked diligently on the floor plans and on many other figures in the volume.

I thank Ravina Aggarwal, Cynthia Gill, Therese Kross, and Radhika Subramaniam for their help in the library searches. Yang Jiang provided helpful comments on Chinese houses and ethnographic sources. Uma Chandru helped me understand South Asian houses and households, and she and Vijaya Chandru made useful comments on an early version of my methodology chapter. Lee Horne guided me through a vast literature on Islamic housing traditions; she also provided useful comments on my coding scheme for communities and houses. I was aided in various ways by Ruth Ann Brooks, Gary Feinman, Laura Finsten, Kathryn Kamp, Stephen Kowalewski, Carol Kramer, Arthur

Murphy, Peter Peregrine, Amos Rapoport, and William Sanders. Although they did not always agree with what I wrote, I benefited substantially from comments made on a draft version of this book by Carol Ember, Melvin Ember, Lee Horne, Stephen Kowalewski, Keith Otterbein, Peter Peregrine, and Amos Rapoport. Any errors or omissions are my own.

Contents

Chapter 1 • Introduction 1

The Scope of Inquiry 4
An Approach to Households 5
Houses and Consumer Behavior in Households 7
Canonical and Indexical Communication
and the Built Environment 8
Houses, Communication, and the World of Goods 13
Theory versus Reality 18
Communication and the Social Reproduction of Households . . . 19

Chapter 2 • A Comparative Method 21

Introductory Comments 23
A Graphical Method Based on Floor Plans 24
Floor Plans as Graphs 26
Measures of Scale, Integration, and Complexity 31
Scale 31
Integration 32
Complexity 33
Selection of the Sample of Houses and Communities 37
China 42
Japan, Vietnam, Thailand, and Java 44

South Asia 45
Southwest Asia 46
Mesoamerica 49
Scale, Integration, and Complexity:
A Preliminary Comparison across Regions 50
Scale 51
Integration 55
Complexity 58
Scale, Integration, and Complexity Illustrated 64

Chapter 3 • Household Social Reproduction and the Canonical Communication of Habitus 77

China 80
Java 88
Japan 89
Thailand 89
Vietnam 90
South Asia 91
Southwest Asia 95
Mesoamerica 101
Explaining Variation in Canonical Communication 102
Results of the Analysis 107
Interhousehold Canonical Communication 110
Additional Notes on Household Social Reproductive Strategy 110
Household Social Reproduction and Curatorial Consumption 112

Chapter 4 • Indexical and Social Boundary Communication 115

Social Boundary Communication 124
Indexical Communication 137
Household Economic Strategies and Indexical Communication 140

Chapter 5 • A Macroregional Approach **149**

Cores and Peripheries in Macroregions 152
An Evaluation of a Macroregional Theory 154
"Closed" and "Open" Communities 157
Core versus Periphery Houses and Households 161
Comments on Core–Periphery Distinctions
in the House Data Set 169
Household Composition and Social Reproductive Strategy 172
Network Interactions versus Market Structure 176
Evaluating the Model 179

Chapter 6 • Conclusion **183**

Steps toward a Method of Wealth Comparison 185
Cross-Cultural Analysis and Peasant Studies 190
Housing, Social History, and the Political Economy of Complex
Societies—A Hypothesis for Future Consideration 192
I. China and Adjacent Areas (Japan, Northern
Thailand, Vietnam, Himalayas) 192
II. Hindu India 192
III. Southwest Asia Main Series 193
IV. Southwest Asia "Other" 193
V. Mesoamerica 193

Appendixes **199**

References **253**

Index **269**

Chapter 1

Introduction

This book is about houses and their variation, both within communities and regions, and cross-culturally. But the subject matter in the following pages goes beyond just houses alone; by studying them, I hope to learn about human behavior in the context of households, particularly regarding how choices are made about the cost of housing. If this is my goal, why not address households and the behavior of their residents more directly? Unfortunately, for the kinds of questions I address, our knowledge of household behavior is surprisingly limited. Anthropologists have learned much about households in terms of their kinship terminologies, social structural arrangements, production techniques, domestic symbols, and marriage practices, among other aspects of the culture of households, but, as Wilk (1989: 28) points out:

> What is peculiar is that anthropology has developed comparative techniques and terminology for almost every aspect of human culture *except* the daily conduct of household relationships and the handling of funds. There is no comparative "Home Economics" on a par with comparative studies of systems of production. It seems odd that the very heart of domestic life, the daily activities and interactions that are the "habitus" of the household, is not an ethnological subject in and of itself.

Although there are many different research strategies capable of contributing new knowledge to this area of inquiry, in what follows I carry out a comparative study that utilizes contemporary architectural and ethnographic descriptions of houses and house-life, considered, as

much as possible, given the limitations of the data, within their respective social contexts. Below I justify the attention paid to houses as a way to approach household study.

Because information regarding the behavior of actual households is so rarely available, my most important sources are community ethnographies in which houses and house-life are described in terms of what is typical in each community. In some cases this is augmented by descriptions of social variation—for example, wealthy versus poor households (and their typical houses)—but obviously, my research design is faulted in the sense that it addresses issues pertinent to household behavior without sufficient information about specific households. Given the state of our discipline's knowledge of these matters, this is an unavoidable deficiency. Rather than dwell on the paucity of information, however, I decided to forge directly ahead with the comparative, community-based research, to find out how productive it might be in light of the questions I was asking. Although I experienced a more-or-less constant sense of frustration with methodological difficulties and the limited information at my disposal, the process, I think, has been enlightening and productive.

THE SCOPE OF INQUIRY

Peasant households and their houses are the subject-matter of this work. By peasant I mean those households found in rural areas of large and complex agrarian (or industrializing) societies. Although nearly all the households in the communities I studied are partially self-sufficient materially, in that they produce and process at least some (usually most) of the food and fiber they consume, they also engage in extrahousehold economic transactions, usually commercial ones, at community, regional, and larger spatial scales (cf. Wolf 1966). The villages and houses I selected for study are found in regions where a peasant way of life has persisted since antiquity. Thus some potentially usable sources, in areas more recently "peasantized," were not included. I restricted myself in this way because the present study is part of a larger project that will trace change in rural households in the major early civilizations, from the periods of the earliest states and cities to the present day. The regions discussed in this book include China and

adjacent areas, South Asia, Southwest Asia (including, to a limited extent, the Nile Valley), and Mesoamerica. I justify my selection of particular regions and cases in detail in the next chapter.

AN APPROACH TO HOUSEHOLDS

By *household* I refer to a group of people coresiding in a dwelling or residential compound, and who, to some degree, share householding activities and decision making. In the phraseology of Netting, Wilk, and Arnould (1984: xx), they are "task-oriented residence units." As always, it is difficult to establish definitional parameters for households that will apply with facility cross-culturally (cf. Netting, Wilk, and Arnould 1984: xxvi), so exactly what "householding activities and decision making" will imply in each case is varied, but in all cases they are coresident groups.

The most common form of the household in my sample is the nuclear family (with which I include irregular forms of the nuclear family where one spouse is not present), referred to variously below as nuclear or "simple" households (Hammel and Laslett 1974: 92). Beyond the nuclear family, other individuals may add to the composition of the household, most frequently the married offspring of the senior generation(s), and/or, rarely, servants or agricultural laborers (a "houseful" in the phraseology of Hammel and Laslett 1974: 78). Housefuls are not considered separately in what follows because they are so rare in the cases I studied. For purposes of simplicity, I use the term *complex* household to describe the various household types that incorporate married offspring, including the "stem" or lineal form (parental generation[s] plus one or more married offspring) and the "extended" or "joint" form (two or more coresident married siblings) (cf. Cohen 1976: 62).

A common household budget (referred to below as pooled resources) is not a crucial feature of households according to my definition; in fact, households may consist of two or more families with largely separate budgets, so long as they are coresident and continue to share some householding activities (often the degree of overlap of domestic budgets within complex households is not well described in the community-based ethnographic literature). In China, married off-

spring in some cases coreside in the parental dwelling after the death of the parents and the division of property but continue to share responsibilities for the maintenance of the house and the ancestral shrine (e.g., Kulp's [1925] distinction between an "economic family," a joint economy, and a "religious family," which has separate ovens but shares one ancestral shrine). The crucial aspect of the household for my purposes is coresiding within the same house or residential compound ("household cluster" in the phraseology of Wilk 1984: 224). I avoid concepts like "coresident domestic group" (Hammel and Laslett 1974: 76) and "domestic group" (Goody 1972: 106) because these conceptualizations imply an unwarranted degree of isomorphism between household as a coresident group and domestic activities including child rearing and procreating (Bender 1967; Levy and Fallers 1959).

In the cases included in this study, a complex household is almost always the result of a decision by one or more couples to remain within wife's or husband's parental house or residential compound after marriage (more rarely, married siblings may decide to coreside in a dwelling or compound not that of their parents). In some cases the stay is short, and the couple moves out as soon as they are able to establish an independent household. In other cases they stay for an extended period, until, or even after, the parents are deceased. These differences do not imply two sharply demarcated household types, but rather variation in the "rhythm of the domestic cycle" (Goody 1972: 118), depending on the timing of household fission. As I demonstrate below, this aspect of household decision making is strongly bound up with various physical features of the house itself and so was an important concern of this study. During the course of coding, I came to the realization that the postmarital residence decision was not simply a manifestation of a cultural preference ("neolocal," "matrilocal," "virilocal," etc., as it is usually regarded in anthropological discourse), but could be viewed as one aspect of what I refer to as *household social reproductive strategy,* a topic I address more fully below. I found it feasible to code my community sources in terms of two dominant types of social reproductive strategy as they relate to household fissioning and postmarital residence (and a more ambiguous intermediate type that is described in more detail in. Chapter 3) (cf. Laslett 1984:

359). In the "neolocal" strategy, the social reproductive goal of parents is to aid married offspring in establishing themselves, as early as possible, as successful, but separate, nuclear households in their own houses. In the "household continuity strategy," the goal of the parental generation is to maintain the social integrity of their household, over multiple generations, by encouraging married offspring to remain in the parental dwelling or compound.

HOUSES AND CONSUMER BEHAVIOR IN HOUSEHOLDS

The goal of this research is to contribute to an understanding of how social and cultural factors influence the way households make decisions about the houses they live in. I focus attention on certain kinds of decisions about houses, especially decisions concerning size, layout, spatial complexity and space use, elaboration of symbolic content (the degree to which the physical features of the house reflect cosmological principles), and external decorative elaboration. When I started this project, I had hoped to develop a method for comparing the costliness of houses based in part on construction materials, but I found it difficult to accomplish, given the poor quality of data and the fact that building materials display so much variation in costs by locality. Alternate methods, for example, based on the energetic costs of house building (e.g., Abrams 1984), were impossible to apply in the absence of suitable data from my coded cases. So in what follows, construction materials are briefly addressed but not systematically incorporated into the analyses.

My decision-making approach regards houses as a consumer good. I am therefore working from an assumption that house form is not simply the outcome of a cognitive model found in each local cultural system, but rather reflects the interaction of both cultural norms and the decisions of members of the household. As Wilk (1990: 35) expresses it:

> Culture does not shape houses in some abstract or direct fashion; *people* shape houses. They are informed by cultural knowledge and they act within cultural constraints, but there is always a vital dialectic between cultural rules and actual behavior.

Further, I embrace the perspective that views consumer behavior as social action (a "social economy" perspective as described in Rutz and Orlove [eds. 1989]). In this perspective, the following features of consumption are emphasized: "Consumption [is] often public in nature . . . goods [can] be used not only to reflect but also to influence social relations . . . [and] a system of categories of goods [can] be linked to a system of social classification" (Orlove and Rutz 1989: 17; they emphasize the importance of houses as a consumer good on their p. 19) (cf. Mason 1981: Chapter 2; Wilk 1989, 1990).

I locate my consumer behavior theory in households, but in doing this I avoid any firm assumptions about how decisions are reached within that social domain. There is evidently considerable variation in this cross-culturally, within particular communities, and across the span of the domestic cycle, but the necessary information is rarely available that would make it possible to pursue this line of questioning in any depth (Laslett 1984: 370–374), at least much beyond whether or not there tends to be pooling of household resources. Occasionally, I encountered anecdotal information concerning gender-based differentiation in decisions about house form, but this topic could not be pursued systematically. In spite of the gaps in data, however, I avoid an assumption of "joint utility" (e.g., Becker 1976, 1981; Becker and Michael 1976), in which it is assumed that households are singular units of decision making (cf. Donham 1981: 536–538; D. Wolf 1990; Folbre 1988; Hart 1992). In fact, I will argue that one of the most salient aspects of social dynamics producing cross-cultural variation in house form has to do with gender and generationally based conflicts that can occur within households.

CANONICAL AND INDEXICAL COMMUNICATION AND THE BUILT ENVIRONMENT

It is widely accepted that houses are part of a society's system of nonverbal communication. Amos Rapoport (1982, 1990) pursues this analytical perspective through a wide range of examples of communication through the built environment, including houses. His wide-ranging discussion elucidates the many ways in which communication occurs through built media, including how the built environment

serves as a mnemonic device "the cues of which trigger appropriate behavior" (1982: 61), how the built environment promotes enculturation (pp. 65–70), how "space and physical objects communicate rank and power" and other aspects of social and personal identity (p. 116), and how the built environment communicates symbolic meaning (pp. 43–48). In this work, I pursue some of the ideas put forth by Rapoport, but I narrow his broad concern with the built environment as a whole to a discussion of just one aspect of that environment—houses. I further restrict the scope of study represented by Rapoport's approach by focusing attention on two particular dimensions of communication that I name *canonical* and *indexical,* while not attempting to argue that other of Rapoport's topics would be irrelevant to the study of houses.

My point of departure for the first communicative pattern, the canonical, is the often-stated idea that houses, like other aspects of material culture, are vehicles "through which social structures and cultural categories achieve sensory existence" (Richardson 1974: 6). Blier (1987: 205), for example, describes the Batammaliba house as a cosmogonic metaphor that "provides the context for seeing things and actions in terms of other things and actions. Like abstract thought, the house serves as a link between ideas and events; it provides the necessary frame that gives disparate ideas and activities coherence and grounding. Through the house, clarity and order are created out of contexts of complexity and disorder." As expressed by Marshall Sahlins (1976: 36), the Moalan house "functions as the medium by which a system of culture is realized as an order of action. Unfolding in a habitation so structured, the relationships between persons are themselves inhabited by the same structure." This is like Bourdieu's (1977) concept of the *habitus,* where:

> In a social formation in which the absence of the symbolic-product-conserving techniques associated with literacy retards the objectification of symbolic and particularly cultural capital, inhabited space—and above all the house—is the principal locus for the objectification of the generative schemes; and, through the intermediary of the divisions and hierarchies it sets up between things, persons, and practices, this tangible classifying system continuously inculcates and reinforces the taxonomic principles underlying all the arbitrary provisions of this culture. (p. 89)

Typically, symbolic communication through the medium of the

dwelling involves the creation of a built environment that manifests social divisions based on gender, generation, and rank, linked to cosmological schemes that express categorical oppositions like order/disorder, elite/nonelite, and purity/danger (cf. Blier 1987; Bourdieu 1973; Cunningham 1973; Donley 1982; Douglas 1972; Gossen 1972; Hamilton 1987; Lebeuf 1961; Moore 1986; Rapoport 1969, Chapter 3; Robben 1989; Sahlins 1976: 32–37; Tambiah 1969; Tjahjono 1989; Waterson 1990; Yates 1989). In these instances, the house as habitus is a medium of communication primarily among the occupants of the house itself, providing a material frame that structures not only day-to-day interactions, but also the more infrequent formal household rituals. In this sense, the form of the house embodies, to use Bourdieu's phraseology, "taxonomic principles" particular to system of culture; by living in the house, its occupants are constantly made aware of the principles, which are thus inculcated and reinforced (Rapoport's [1990: 221] "high-level" meanings). This is similar to Giddens's (1979: 206, 1984) concept of structuration locale.

The house can also serve as a channel of nonverbal communication that transmits messages from its occupants to others outside the house. In this "indexical" mode, what is communicated is not a cosmological scheme (see below), but social identity; the house provides what Douglas and Isherwood (1979: 74–76) call *marking services.* Following their logic (1979: 161–162), the house can be construed as a consumer good in which "the consumer's objective is to operate a coherent information system by using marking services. His need for goods serves his more direct need to be included meaningfully with fellow consumers" (cf. Belk 1988). A large literature has addressed the topic of how houses and their furnishings communicate social identity (e.g., Duncan, ed., 1982; Duncan 1982; Duncan and Duncan 1976a, b; Rapoport 1981, 1982, 1990; Chapin 1933, 1935; Chapman 1955; Sircar 1987; Goffman 1959). I discuss this at more length below.

These are two main categories of messages communicated by the material environment of the house that I address below. In the canonical, what is communicated largely pertains to the meaning of enduring symbols reflecting concepts held in common by people participating in a common cultural system. In the indexical, information is communicated concerning the current status of a household, ex-

pressed in terms of variables such as wealth (other aspects of inter-household communication, including, for example, ethnic identity, are not addressed here). I briefly address another aspect of "marking services," although it is poorly understood, in which the external decoration of the house manifests a strongly drawn social boundary between that household and other social domains, including other households. I refer to this as a "social boundary communication" and deal with it at more length in Chapter 3.

The phraseology I use here is borrowed from Roy Rappaport, in his discussion of the communicative aspects of ritual (1979: 179–183). In Rappaport's discussion, ritual involving canonical communication expresses messages that are invariant and durable (at least seemingly so); the messages are "encoded in the liturgy" (Rappaport 1979: 179) (cf. Bloch's [1977] concept of ritual communication, and Wolf's [1984] "value culture"). In the canonical form, messages communicated through the medium of the house pertain to the perduring features of social relations obtaining among the household's members, legitimated by their linkage to "ultimate sacred propositions" (in the phraseology of Rappaport; the cosmological principles mentioned previously) held in common by the community of believers. The indexical pattern, in contrast, communicates information concerning a household's current state in terms of wealth or perhaps social status (these issues are discussed at more length in the chapters to follow).

In the case of canonical communication, the scope of interest of the analyst is primarily the interior of the house, including, importantly, the most private "back regions" (from the phraseology of Goffman 1959), where there are often found the most intimate and private household interactions and rituals. When investigating the indexical communicative role of the house, attention is drawn primarily to its more public areas and elements, especially including the facade or other exterior features that provide information on variables like costliness and taste, to outsiders, and then following a path inward along the line of travel of a guest passing through its formal entrance, and then into space or spaces normally devoted to formal guest entertaining ("front regions").

In the analyses below, I treat these disparate zones and realms of activity largely separately, while recognizing that to some degree there

can be spatial and functional overlap between canonical and indexical communication. This could be true, for example, to the degree that outsiders are privy to household rituals of canonical communication. In rural Japan, for example, guests attending household ceremonies are arranged in a hierarchical ordering centered on the house's *tokonoma* shrine; these shrines are the ritual center-points of houses in which the use of space reflects a powerful sense of domestic social hierarchy (Beardsley, Hall, and Ward 1959: 84–85, Chapter 9).

Some housing traditions emphasize a formalization of gender-based space use that is relevant primarily to the establishment of household social status through the rigorous display of appropriate separation of the sexes. This links sacred principles not only to the habitus (and its implied gender- and generationally based statuses within the household), but to a statement of status of the household vis-à-vis other households, counted in terms of the rigorousness of the public display of adherence to concepts shared by the community of believers. In this case, a canonical mode of communication is transformed into a kind of indexical display, albeit not one communicating status based on wealth. Analogously, in situations like Nubia, where facades are often decorated with culturally potent evil eye symbols, icons manifesting powerful creatures, or elements mirroring the tombs of holy men (Wenzel 1972: Chapter 6), canonical communication also takes a public form. Apart from what might be inferred from these symbols by the cultural analyst concerning the cognitive model of the members of Nubian culture, the same facade features are also decorative, and thus manifest household wealth. They are potentially very costly, especially those painted by prominent specialists (Wenzel 1972: Chapters 4 and 5).

In situations like these, canonical and indexical communication are inextricably intertwined. I suggest that in such cases where the domestic cultural symbols are expressed publicly, there may be taking place a type of interhousehold communication of the sort that allows a household to communicate a certain kind of message unlike those communicated purely indexically. Through its public display of potent symbols and cultural norms, or through its incorporation of outsiders in culturally prescribed household ritual, I suggest that the household is engaging in acts that serve to publicly validate its acceptance of

sacred propositions held in common by all members of its cultural group, thus affirming its social linkage to a community of fellow believers, not just its current status of wealth (this draws on the discussion in Rappaport 1971 and 1979: 196–198). This "social linkage communication" has an affinity to canonical communication (I regard it as a subset of canonical communication in general), while at the same time perhaps serving, as in the Nubian case, as a context for transmitting indexical messages as well. What I wish to make clear in this discussion is that although two patterns of communication are conceptually distinct, in practice they may not be quite so distinguishable.

An issue I address in some of the analyses to follow relates to the varying degrees to which canonical and indexical communication are or are not separated in practice. One could predict that the goals of social linkage communication (which says, "we're part of the community") could come into conflict with the goals of indexical communication (which might contain the message: "we're better than everybody else"). The relationship between these two modes of social communication is an important theoretical issue that is approached, but not entirely resolved, through my analyses and comments in subsequent chapters.

HOUSES, COMMUNICATION, AND THE WORLD OF GOODS

To varying degrees, but always, it seems, to some degree (I discuss this more below), marking services work through a display of material possessions. And the house often has a particularly important role in this kind of communication. The reasons for this can be elucidated in theoretical terms, based in part on sources like Douglas and Isherwood (1979) and McCracken (1988). The point of departure for this discussion is the fact that in communication systems, particularly in symbolically based human communication systems, there exists a potential for deception (e.g., Rappaport 1979: 180, 223–246). This problem is found in the context of indexical communication carried out through the medium of material goods. As McCracken (1988: 32) expresses it, "one of the very great liabilities of status claims made by way of material culture is the ease with which they are counterfeited" (cf.

Goffman 1951). But there are really two related issues here, not just the potential for deception. Not only might it be possible to make fraudulent claims through consumption, but it might also be the case that goods could be subject to miscomprehension.

Fraudulence and miscomprehension are most likely to occur in two kinds of circumstances. The first is where meaning is communicated through highly arbitrary symbols, as would apply in the case of goods subject to the whims of fashion. To a person not privy to insider knowledge of the nuances of the world of clothing fashion, for example, two men wearing similar-appearing pin-striped suits might seem roughly equivalent in social status. But this could be a serious misreading if one of the suits had been purchased at Penney's while the other is one designed by Giorgio Armani. The other situation leading to faulty communication might obtain in a situation in which a good is consumed in isolation, that is, apart from a homogeneous constellation of goods that portray a consistent status message. The naive observer described above might not have been too far off the mark in attributing equal status to the two men wearing pin-striped suits if it had been the case that the wearer of the Giorgio Armani has only this one expensive suit, purchased to make it appear to be the case that he commands a substantial income when in fact he does not. An item like this suit, consumed in isolation, has a high potential for communicating a fraudulent message. According to McCracken (1988: 121): "It appears to be the case that consumer goods do not communicate well when they exist in isolation or in heterogeneous groups" (cf. Douglas and Isherwood 1979: 118).

By comparison with many of the kinds of goods customarily consumed in household contexts, including food, clothing, and furniture, I suggest that housing would likely have a special role to play in indexical communication. This is true because among the world of goods, housing should be uniquely less subject to either fraudulent communication or miscommunication as described above. First of all, a house typically represents a major cost to the household (cf. Duncan and Duncan, 1976b: 251). In contrast with clothing, furniture, and food, each item of which normally represents a relatively small cost, housing presumably would be less subject to rapid turnover driven by considerations of fashion. Even an account clerk might be able to

afford the Giorgio Armani suit, but he would not under any circumstance find it possible to purchase the house in Winnetka or Malibu that would be its "structural equivalent" (to use the phraseology of McCracken 1988: 120). This is not to argue that housing is entirely outside the realm of fashion and taste, that is, symbolic communication. But in the process of reviewing a substantial literature on peasant vernacular houses (i.e., self-built or built with the aid of local specialists, not architects), I found that the sequence indicating variation in housing costliness in many regional settings tended to be repeated, from small structures made of low-cost wattle-and-daub walls and thatch roof, to mud brick, to larger houses with walls of costlier fired brick with tile roof (or slate, etc.). Although this sequence is not found everywhere, it still was the case that in many instances an outsider like myself with little local knowledge could probably do a credible job of ranking houses in a peasant community in terms of costliness, based roughly on a knowledge of the volume of construction materials and the comparative costs of different kinds of widely employed building materials. This need not imply that I would have necessarily correctly ranked the various households in terms of social status or wealth, but the houses themselves could be ranked. Houses effectively communicate this kind of information because they communicate in part by means of "iconic" representation (signs) rather than through purely symbolic representation. Iconic signs, unlike pure symbols, are not highly arbitrary, and instead manifest some of the properties of the thing they signify (cf. McCracken 1988: 37; Rappaport 1979: 181). It may be due to this peculiar property of houses that they are so often central to strategies of indexical communication.

In the following chapters, particularly Chapter 4, I make use of housing information in my discussion of household indexical communication. This was, I think, a particularly productive strategy in the case of the rural villages that are the subject matter of this book. But in other situations a variety of factors would have to be considered before attempting a similar kind of analysis. In urban settings, in particular, due to the high cost of land and other locational considerations, the location of the house, rather than the physical properties of the house itself, may be crucial in interpreting costliness and what the house might imply in terms of wealth status. Situations in which

housing subsidies mitigate costs would also present a more complex interpretive situation to the analyst. In the cases I discuss in this book, houses are self-owned and sited on village lands that involve little or no cost to the household. And I found that in most instances the villagers themselves recognized the crucial role of housing in indexical communication. In 11 of the 14 communities I coded that contain extensive discussion of how social status is communicated indexically, houses were described as a major source of information. For example, Yang (1945), describing Taitou, China, states that "an affianced girl's parents want to know what the house of the boy's parents looks like, for they judge the family from it." The potential for deception is known to exist in connection with other indicators of socioeconomic status in this village, as when a boy's family borrows an ox to put on display for his potential wife's family, when they are "anxious to see the marriage completed but have no cow or ox" (Yang 1945: 48–49).

I do not mean to imply that houses are the sole means of indexical communication in the peasant communities I describe in this book or elsewhere. Information may also be transmitted based on the quality of a family's meals, home furnishings, its clothing, serving dishes, the amount and quality of its agricultural resources, among a myriad of other possibilities. But, at least when considering just consumer goods as status indicators, I would argue that only a house can serve as a singular source that to a considerable degree can stand alone and still retain its communicative efficacy. By its nature it is highly visible, and because it is so comparatively costly, is less subject to falsification. As I described previously, other categories of goods are likely to gain validation in wealth communication only when consumed in sets of structurally equivalent goods. Household consumption rituals (cf. Douglas and Isherwood 1979: 114–127; McCracken 1988: 84; Rappaport 1979: 184), including such events as dinner parties, religious celebrations, weddings, funerals, and wakes, are contexts for displaying sets of goods in this integrated manner, and the validity of indexical communication in these contexts is widely recognized. In the Javanese village of Tamansari (Jay 1969: 269), for example, "the size of a house and the quality of the building material proclaim a family's economic condition, a major factor affecting personal rank. . . . Another approved expenditure is entertainment at certain

family celebrations . . . and a third is food to be distributed on occasions of exchange."

In the rural communities I used as sources for this study, weddings and wedding parties in particular (sometimes funerals) are important indexical communicative events for households, often representing one of the major expenses a household faces over its life span. Weddings not only have marking services for the parental household, but also serve to launch the newly married couple into society at a desired level of social status. Public display of dowry can be a particularly important part of these rituals (e.g., Harrell and Dickey 1985), allowing the newly established household to display a set of structurally equivalent goods. In all of the cases studied (and in many other cases in similar societies), the house is not irrelevant in such ritualized consumer display. It is incorporated into the communicative act because wedding parties (in the communities I coded) take place in the house (or houses, as in some cases there are celebrations in both the groom's parents' house and that of the bride's parents). The house thus contributes to interhousehold communication by providing a "frame" for the event. According to Gregory Bateson (1972: 188): "A frame is metacommunicative. Any message which either explicitly or implicitly defines a frame *ipso facto* gives the receiver instructions or aids in his attempts to understand the messages included within the frame" (cf. Goffman 1974; I apply this concept to the analysis of public architecture in Blanton 1989).

A full understanding of indexical communication would require a knowledge of variation in houses as well as in household consumer ritual. However, it has been my experience that published ethnographic works are deficient in their descriptions of the ritual aspect of material communication. Often, for example, only "typical" wedding parties are described (to get at the cognitive model rather than household behavior), precluding any possibility of assessing the degree of variation in the elaborateness of the material displays. Or, typically, an ethnographer will have observed first-hand no more than a small number of such events. By contrast, at least in the sources I found suitable for comparative analyses, descriptions are provided of houses and their variation. Houses not only are likely to have a unique role to play in indexical communicative strategies, but they also proved to

be the most fruitful source of information in light of my comparative problem orientation.

THEORY VERSUS REALITY

Up to this point I have discussed canonical and indexical communication in general terms, informed by the stimulating theoretical presentations of Douglas and Isherwood, McCracken, Rappaport, and others. The theory I have laid out, however, should not be regarded as a paradigm, by which I mean a set of explanatory models with the potential to describe people's actual behavior in all situations. Instead, these ideas have been developed only for the purpose of serving as theoretical background to comparative research in which hypotheses, drawn from the theoretical framework, will be proposed and empirically evaluated. It is always possible to find a few facts that will seemingly support the veracity of any theoretical statement. Most anthropologists support their theoretical position in this manner, finding a few positive cases and ignoring the rest. But my goal is not to support any particular theoretical position or to demonstrate the veracity of a particular idea. It is instead to evaluate hypotheses, and ultimately theory, by empirically subjecting both to maximum strain using a comparative method. The result should be the development of even more robust theory. The idea, for example, that the form of the house is a major source of messages in canonical communication, based on sources like Bourdieu (1977: 78–87) and Sahlins (1976: 32–36), clearly has more applicability in some situations than in others. In the cases described by Blier (1987), Bourdieu (1973), Cunningham (1973), Donley (1982), Douglas (1972), Hamilton (1987), Tambiah (1969), Yates (1989), among others, it is evident that house form mirrors cosmological principles. But focused analyses of particular instances give us no leeway for the explanation of intra- and intersocietal variation or change (e.g., Pellow 1988). As Moore (1986: 2) points out, an emphasis on "the internal logic of symbol systems brackets off the possibility of understanding how such systems are used and situated in defined historical contexts" (cf. Campo 1991: 2). In the cases I coded for this study, there is considerable variation in the degree to which houses are built in conformance to cosmological

schemes, some showing little or no evidence of a design strategy that would allow cultural categories to "achieve sensory existence" (Richardson 1974: 6; cf. Rapoport 1990: 221–225). I would argue that the spatial structure of any house, even one not overtly manifesting potent symbols, reinforces to some degree a customary pattern of interaction among its occupants and thus instills and reinforces a cognitive model. But a robust theoretical framework should allow the anthropologist to understand why there might be intracultural, cross-societal, and temporal variation in the degree to which houses overtly manifest cosmological principles. Below I propose such a theory.

Similarly, when I looked at strategies of indexical communication, I found considerable variability in the uses of marking services. The largest discrepancy was found in the fact that, in some communities, households seem to engage only minimally in communicating indexically through material consumption. Even houses, which should be central to the process of indexical communication, appear in some cases to have been built so as to minimize or inhibit indexical communication. In these cases, households seemed to care little about operating "a coherent information system by using marking services" or to "be included meaningfully with fellow consumers" (Douglas and Isherwood 1979: 161–162) (cf. Duncan 1982: 47; Duncan and Duncan 1976b; Wilk 1989). Below I develop and evaluate several hypotheses that explain variation in strategies of indexical material communication.

COMMUNICATION AND THE SOCIAL REPRODUCTION OF HOUSEHOLDS

The common theme that links up the nonverbal communication and consumer behavior theories I employ is what I will refer to as the concept of household social reproductive strategy. By *household social reproduction* I refer to the various strategies that household heads utilize to achieve and maintain desired social statuses for themselves and their offspring. This approach focuses on households themselves, in their social settings, rather than on the social reproduction of societal structures and culture writ large, as seen in the works of Bourdieu (1984), Giddens (1979, 1984), and others discussed in

Morgan (1979). A broader consideration of household social reproduction in general would address all manner of domains that can be manipulated to bring about desired social reproductive outcomes, including production, time allocation, reproduction, socialization of children, inheritance, human capital, marriage, and consumption, among other possibilities. Goody (1990) summarizes a vast literature on the "mechanisms by which property and status were passed on" in the preindustrial societies of Eurasia (cf. Selby and Hendrix 1976, and Selby, Murphy, and Lorenzen 1990, on Mexican households; Bourdieu 1976: 23–24, passim, on marriage strategies; Strathern 1982: 40–42 uses the phrase "family interests" rather than household social reproduction). In using terms like strategies and manipulation, I do not mean to imply that household social reproduction always involves envy, competition, or status seeking, although I will point out that these behaviors may occur in any society, not just "capitalism." Below I illustrate some of the kinds of situations that might precipitate such behavior. I proceed from the premise that, in all human societies, individuals, households, and other social groups endeavor to attain and maintain what they regard as desirable social statuses in society, employing a host of social reproductive strategies to that end. In all societies there are many contexts within which social reproductive strategies are played out, including individual, household, and community contexts, among others. For purposes of this study I am focusing on the household alone, while remaining cognizant of the fact that by thus isolating and bounding households as units of analysis, I am restricting myself to developing an incomplete picture of the nature of social reproductive behavior in general. The writings of our Africanist colleagues, in particular, stand as a reminder that social reproductive strategies as defined here (including production, socialization of children, and consumption, among others) are not necessarily played out primarily in household or domestic contexts (e.g., Sanjek 1982). (In fact, in his discussion, and others like it, household social reproduction is reduced to little more than just housework.) However, in the peasant villages and regions I investigate in this book, households are a major, in fact probably the major, arena in which social reproductive strategies are played out, as is true in many societies.

Chapter 2

A Comparative Method

INTRODUCTORY COMMENTS

Before developing a method that can be used for the cross-cultural and diachronic comparison of houses, I first need to contextualize the approach I use here within comparative studies in anthropology and related disciplines. The central methodology of comparative studies in anthropology is cross-cultural analysis, which has developed a powerful means for the evaluation of theoretically derived hypotheses through statistical tests of association among variables coded from discrete cultural units (e.g., Pasternak, Ember, and Ember 1976, discussed below). In contrast, the subject matter of this book is ethnographically described peasant households, houses, and communities, many of which display shared cultural features embodied in a small number of major civilizational patterns (e.g., Chinese, Islamic, Mesoamerican). Given the resulting potential for cultural similarity among some of my cases, there is less "sampling independence" in my data than is desired in traditional cross-cultural research (e.g., Naroll 1970). I am thus faced with an unusual set of methodological constraints that require me to depart in some ways from the conventional cross-cultural method. Most of what follows can be regarded as being comparative in orientation, rather than cross-cultural, strictly speaking, although I do make qualified use of some elements of traditional cross-cultural analysis.

In this work, the two methodological orientations, comparative and cross-cultural, are used in a complementary fashion as follows: I

first develop and apply a comparative method that allows me to identify and describe patterning in the data of several of the major world regions where a peasant way of life is found, based on well-described case studies (houses, communities, and regions), like the "comparatively oriented case studies" in Ragin (1987). From the inferred patterning, I provisionally explain variation in house form by reference to features of household structure and function, community context, and regional context, stated as a series of hypotheses. I then evaluate these, along with hypotheses drawn from other sources, using a statistical cross-cultural method, although I do this in a qualified sense that maintains an awareness of the degree to which cultural similarities among cases might influence statistical outcomes. The latter is less of a problem than might be imagined, because communities sharing common cultural backgrounds are not, in fact, identical. Because the cases I am coding are not "cultures," but rather particular houses and communities, between-case variation reflects, in part, the consequences of localized economic and political factors. Cultures could not be coded as analytical units because variation is found within the major cultural spheres represented in my data. For example, Chinese houses, although influenced by a common cognitive code everywhere, do not express that code equally in all communities, owing to variation in local economic and political contexts found within the larger cultural arena. Thus, to some degree, my cases (houses and villages) can be regarded as independent social entities that permit limited hypothesis testing in a cross-cultural fashion. Additionally, where the data permit, it is possible to compare cases found within particular cultural areas, to comprehend how local social factors influence the playing-out of cognitive codes ("intracultural analysis," e.g., Harrell and Dickey 1985: 114; Pelto and Pelto 1975). I return to evaluate the efficacy of the latter approach in my concluding comments. Next I introduce a set of methods for the comparison of houses and use the method to characterize the major regional differences and similarities found within my coded data.

A GRAPHICAL METHOD BASED ON FLOOR PLANS

In later chapters, several specialized measures are described and utilized for comparing particular aspects of houses, for example, a mea-

sure of external decoration that is used for the testing of hypotheses about social and indexical communication in Chapter 4. Here I describe the basic comparative measures of house form that will serve as the starting point for all later discussions of variation in my sample. Once this method is established, I then describe my sample (and how I selected it) and use the method to illustrate the main patterns of variation both within and between the regions and communities I studied. In what follows, I employ a methodology, grounded in graph theory, that allows me to derive measures of scale, complexity, and integration of houses, in a manner facilitating cross-cultural comparison, and which could be applied to diachronic comparison. I have been influenced in my thinking about the utility of graph theory and method, as applied to houses, through several sources from regional analysis and architectural analysis, especially Hillier and Hanson (1984), but also through general works like that of Hage and Harary (1983), who apply graph theory to the analysis of a wide range of social, symbolic, and cognitive structures (cf. Hage 1979). Foster (1989), Gnivecki (1987), Hopkins (1987), and Plimpton and Hassan (1987) have done interesting exploratory analyses of house architecture using a similar methodology.

Architects have pioneered techniques of spatial analysis of buildings, including in some cases dwellings, but for the most part these have been oriented to the creation of optimizing plans for public and commercial buildings (e.g., March and Steadman 1971). A similar tactic was taken by Friedman (1975) in his analysis of dwellings. These techniques have minimal applicability for the subject matter of this research for two reasons. First, data on frequencies of trips between points of interest in the structure are required, data that are rarely if ever available in the ethnographic accounts of the houses that are the subject matter of this work. Second, unlike the commercial and public settings where least-cost solutions for spatial organization often make sense in terms of efficiency of use, dwellings tend to exhibit a wider range of strategies for the use of space in addition to those that entail movement optimization. As a result, although I have borrowed extensively from the writings of architects (especially Hillier and Hanson 1984), much of what is described here is by necessity new methodologically.

The method described below was developed with the idea of flexibility of use prominently in mind. It was designed to achieve the broadest possible applicability by employing the most elementary source of data, namely the floor plan of the dwelling. Thus a variety of sources of information can be used for diachronic and comparative analyses, including archaeological excavations, descriptions of houses that might be found in historical documents such as diaries, or the crude house plans occasionally included in general ethnographic accounts. The method can be expanded where more data are available, including, for example, room dimensions (yes, archaeologists, architects, and ethnographers sometimes publish floor plans without dimensions!), room functions, decoration, and building materials, some of which I discuss below. But as much as possible, I discuss variation in terms of variation in floor plans alone so that other researchers using more limited data sources will be able to relate their materials to the broad sample discussed in this volume. For example, like "model" life-tables used to elucidate demographic characteristics of poorly censused populations (e.g., Weiss 1973), the data presented in this study could be used by an archaeologist as a well-understood, ethnographically and regionally connected data source that can be a basis for comparing his or her excavated, less well-understood data.

FLOOR PLANS AS GRAPHS

The analyses that follow require that the floor plan of the house or dwelling compound be reduced to a planar graph consisting of nodes (or vertices) and edges. Nodes are, normally, rooms, whereas edges denote passages between rooms. The advantage of this simplified graphical representation lies in the possibility of elucidating the essential structure of the relationships between rooms, then expressing these relationships in simple quantitative measures suitable for comparative purposes. According to the method developed here, the nodes of the graph are architectural spaces bounded by walls or other boundary markers, such as change in floor level (with one exception described below). Nodes are usually roofed rooms, but included also are unroofed areas such as animal pens, courtyards, or comparable unroofed bounded spaces. Although rarely described in my sample, it would be

possible to regard activity areas within rooms as nodes, even when such activity areas are not bounded by walls. Kent (1991: 451), for example, identifies "cognitive barriers" that separate gender-specific spaces in the Navajo hogan. But if we proceed with the idea that the most frequently available source of information will be the floor plan, nodes defined in this way might present problems for comparative analyses. But there is a further and obvious additional rationale for using physically bounded spaces as basic units of analysis. Walls or other physical boundaries involve a cost. Thus the construction of a physical boundary to demarcate an architectural space implies a strong desire to constrain movement between spaces and thus to constrain social interaction within the limits set by the architectural form.

In what follows, walls are regarded as walls so long as they constrain movement, even if they do not extend entirely floor to ceiling, or are not entirely opaque. Edges are passages between nodes and include openings, doorways, and doorways with doors. The floor plans in Figure 2-1 have the same graph. Had the data been consistently available in the sources I coded, I would have distinguished edges with and without doors because the use of doors implies a higher construction cost and could thus be used as a comparative measure of costliness.

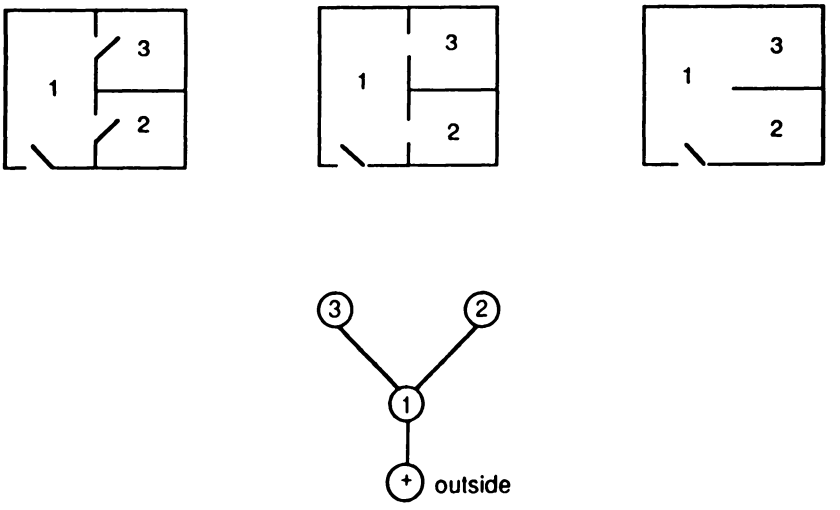


Figure 2-1. Three floor plans with identical graphs.

Because my theoretical framework is grounded in a communications approach, an important dimension of the analyses to follow concerns how the layout of the house constrains the way a visitor approaches the residence, enters it, and is directed to various spaces within, providing the visitor with selected knowledge of the occupants of the house. In other words, visitor/resident interactions as well as resident/resident interactions are viewed as important elements influencing the layout of the dwelling and its distribution of activities in space. Thus one other kind of space will assume the status of "node" in the analyses to follow, namely the outside (cf. Hillier and Hanson 1984, p. 148, who refer to it as the *carrier*). The most important outside space for analysis will be the front space (leading to the formal entrance), from which guests would normally enter the structure in "formal" visiting, and the analyses that follow will proceed with this front-to-back spatial perspective. A back entrance (or service entrance) will be indicated on the graph as an edge connecting back to the outside node.

Within the structure, three kinds of nodes are distinguished, one of which is the node representing the outside (indicated as a circle with a cross). "Transitional spaces" that function to link rooms (halls, passageways, stairs, landings, etc.) are shown as darkened circles (cf. Hillier and Hanson 1984: 155). All other architectural spaces (other than the outside) are shown as open circles and are referred to as primary rooms or primary nodes. The distinction between primary nodes and transitional spaces is a methodological departure from more customary practice in graphical analysis and is done in order to facilitate an understanding of the comparative costliness and complexity of houses, as is illustrated in the following discussion of the floor plans in Figure 2-2.

Figure 2-2 illustrates relationships among cost, connectivity, accessibility, and privacy in floor plans. Graphs with more edges per node imply a higher cost to builder because passageways, particularly those with doors, hinges, frames, and lintels, are costly (Baker 1986), and because passageways occupy space that could have alternate uses (doorways that are simple openings in the wall without lintels, frames, or doors avoid some cost, but limit privacy and take up space). Figure 2-2(b) illustrates a plan that maximized connectivity while minimizing

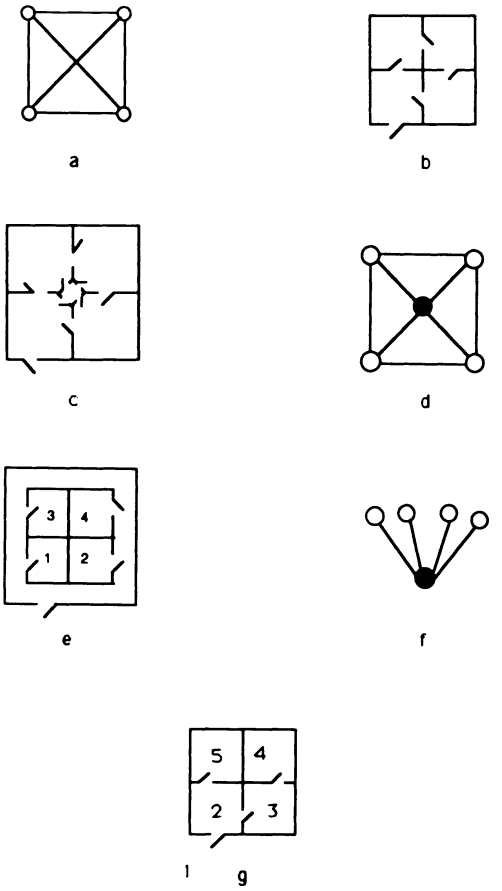


Figure 2-2. (a) Planar graph showing maximum connectivity among four nodes. (b) Floor plan illustrating maximum connectivity without a transitional space. (c) Maximum connectivity among four rooms requires a transitional space and three doors per room. (d) Graphical representation of (c); transitional spaces are indicated by filled-in circles. (e) Maximum connectivity while maximizing room privacy. (f) Graphical representation of (e). (g) A floor plan that minimizes cost to builder.

building cost because it requires no transitional space and requires only one door per room (plus one entrance door). However, the plan sacrifices privacy because three of the four rooms must at times double as transitional spaces. The floor plan in Figure 2-2(e) permits an increased degree of privacy while maintaining only one door per room but represents a higher building cost since a transitional space is

required (assuming, of course, that the house maintains a single entrance; another low-cost design would give each room its own exit to the outside, but that degree of disconnectedness of the rooms of a house is rarely seen; the only example known to me is from highland New Guinea, and reported in Pospisil 1963: Figure 35). Figure 2-2 (a, c, d) would represent a relatively high cost of construction, requiring a transitional space at the intersection of the interconnective edges, and three doors per room (plus the entrance door). However, this design maximizes the degree of choice possible in moving between rooms and allows movement between distant rooms by passing through a transitional space rather than through another primary room. Thus, although its cost of construction is high, it embodies what is referred to as "least cost to user" (compare the analogous reasoning applied to systems of roads in Haggett and Chorley 1969: Figure 3.4). It also maximizes privacy. Plans that save construction costs will sacrifice privacy and/or ease of movement ("least cost to builder"). Figure 2-2(g) would save the most on construction costs for this configuration of four rooms, but sacrifices connectivity, movement choices, and privacy.

The graphical representation of dwellings is dimensionless. It does not distinguish between spaces of differing sizes, hallways of differing lengths, or sizes of courtyards. Normally this makes sense in the analysis of domestic architecture because the distances involved in the movement through domestic spaces or between spaces is small, and thus "distance costs" are a minor consideration (even regional systems of roadways are at times reduced to a graphical representation for certain kinds of analyses, ignoring distance costs, as is illustrated in several cases in Haggett and Chorley 1969). The method of graphical representation I employ includes another kind of simplification in that it considers transitional spaces as single nodes, even though they may contain several different points of "crossover," that is, points where one passes by a doorway along a route to a more distant door. For example, in Figure 2-2(e), the long hall is reduced to a single node in its graphical representation in 2-2(f). This convention precludes the possibility of ranking the relative access of rooms by reference to the "distance" from the entrance expressed in terms of numbers of crossovers. Crossovers ("pseudonodes") are points of possible conflict in

movement and are points of decision to the person passing through the structure (Friedman 1975: 62–63) and thus could be important additions to certain architectural analyses, particularly in the case of very complex structures. I simply mention this possibility, although I did not make use of this distinction in my analysis of rural dwellings described below.

MEASURES OF SCALE, INTEGRATION, AND COMPLEXITY

My comparative discussion begins with a consideration of the most elementary spatial characteristics of houses, based on measures derived from the graph of each house I coded. These elementary characteristics, which can be derived from a minimum of information (the floor plan alone), are expressed as measures of scale, integration, and complexity of the house. As my comparison proceeds, more detailed information is brought into play, for example, household social structure or facade decoration, but these more specific (and less readily available) sources of information are then related back to these elementary properties of houses. The result should be an enhanced ability to conduct comparative studies even where there is little information available to the researcher.

Scale

Because it is dimensionless, the graph permits us to take as a simple measure of scale the number of nodes in the graph (recall that in the figures given below, the outside is counted as one of the nodes). This is useful in cases where areal size is not known. Number of roofed rooms is a very similar measure because nodes usually consist of roofed rooms (at least in this particular sample of houses), but in some cases published floor plans do not (or sometimes cannot, in the case of some archaeological plans) indicate roofed versus unroofed spaces. Below I also discuss scale differences in terms of square meters of roofed area, but this will by necessity exclude some missing-data cases where scale was not provided by the investigator. Square meters of roofed area per person is potentially a useful measure of scale, but the

information needed to derive values is rarely available, and I do not pursue this topic here.

In many applications of graphical analysis, the "diameter" of the graph is used as a measure of scale. Diameter is the shortest distance between the two most distant points on a graph, where distance is counted as the number of edges (Haggett and Chorley 1969: Table 1.5). I did not make use of this measure because it conflates two aspects of graphs that I choose to describe separately, namely scale (number of nodes) and integration (which would be related to the difficulty involved in traveling from one node to another); a highly integrated graph could have many nodes but still have relatively short paths between nodes and thus a relatively short diameter. Also, diameter is a measure of the longest trip between any two nodes, so long as they are the most distant two nodes, whereas throughout the following analyses, I emphasize the front-to-back dimension of each house.

Integration

Integration refers to the degree to which nodes are linked. A "treelike" (or dendritic) graph has few or no redundant paths between nodes (Haggett and Chorley 1969: 8). This is Hillier and Hanson's "nondistributed" relations (1984: 148–155). A poorly integrated house with few links (edges) per node reflects a desire to maintain low construction cost (minimizing the number of passages per node), while sacrificing choice and ease of use (following the logic laid out previously), and, potentially, privacy, if it is the case that travel from one space must involve passing through another primary space. Increased integration is achieved through the addition of more edges per node and perhaps transitional spaces. One way to increase the degree of integration is to provide "circuits" (redundant pathways) between nodes (i.e., where there is more than one potential route between two or more nodes) (Haggett and Chorley's "circuit networks" [1969: 31], or Hillier and Hanson's "distributed" pattern [1984: 148–155]); March and Steadman (1971: 293) and Steadman (1983: 90, 189–191) refer to "cycles" rather than to circuits, and Alexander, Ishikawa, and Silverstein (1977: 630) refer to "loops" rather than circuits. Circuits are of interest to the analysis of floor plans because they are related to

concerns with privacy and have implications for comparing relative costs—to builder and user. Because they provide alternate routes, in some cases they permit more private movements between rooms (more choice), and they facilitate ease of movement, that is, they can reduce the cost of using the house by providing the option of shorter trips between rooms (where a trip is counted in terms of the number of edges between nodes). But the presence of circuits implies a higher cost to the builder.

The most commonly used measure of integration is the Beta Index (*B*), which is simply the number of nodes divided by the number of edges. In graphs the scale of those representing the houses discussed in this volume, which may contain as few as two to five nodes, Beta suffers from an excessive sensitivity to scale and so was not utilized. A graph with 2 nodes and one door (edge) connecting them has a Beta value of .5. Adding one doorway (edge) raises Beta to a value of 1. A graph with 10 nodes and one door (edge) per node will have a Beta value of .9; adding one doorway raises this to a value of 1. Thus in comparing two populations of houses, the mean value of Beta will be strongly influenced by the number of nodes, confusing the issue of integration. Beta values of 1 or higher will indicate the presence of circuits, but I have found it easier to simply indicate the number of circuits per house and to compare integration by comparing numbers of circuits (or mean number of circuits in the case of comparing populations of houses). Frequency of transitional spaces is used to indicate degrees of integration, but transitional spaces are also implicated in measures of complexity.

Complexity

Complexity refers to variation in the use of spaces, and as used here is like Kent's (1990: 127) segmentation, or the degree to which activities are architecturally partitioned. Complexity can be expressed in terms of the degree of specialization of activities by node, and in terms of what I call hierarchical levels and accessibility ranks (I describe the latter below). Activity differentiation between nodes can be measured fairly directly when appropriate information is available, using what I refer to as the *specialization index*. It simply counts the number of nodes in the house that are described in functionally specific terms.

In cases where information about space use is incomplete (which often is the case), measures of complexity of the graph itself can be derived to augment the specialization index. One measure of complexity is based on the number of accessibility ranks of nodes in the graph. The accessibility rank of a node considers the comparative ease with which a node can be reached from every other node in the graph (by comparison with other nodes in the graph). The accessibility of a node can be measured in several ways, each of which provides a ranking of nodes. The first is simply the sum of the adjacency values for each node, derived from the graph's *adjacency matrix*. Table 2-1 is the adjacency matrix for the floor plan of Figure 2-2(g). Numbers designating nodes are found across the top and the left side of the matrix; the relationship between each two nodes is found in the cell defined by the intersection of the appropriate row and column. The presence of a *"1"* in a matrix position denotes the presence of a connection between the two nodes, whereas a zero indicates no one-step access from that node to the other. The summed row values give an accessibility value for each node, which is then used to derive a ranking of nodes in terms of accessibility. In this case, Node 2 had the highest accessibility, with three connections to adjacent nodes.

A second method for measuring relative accessibility counts the length of trips from each node to each other and is derived from the *path matrix* of the graph (where the numbers in the cells represent the shortest paths between nodes, counted in numbers of edges, but excluding, in this and the other examples below, pseudonodes). The relative ranking is based on the sum of all trips from each node to each

Table 2-1. Adjacency Matrix for the Floor Plan in Figure 2-2(g)

	1	2	3	4	5	Sum	Rank
1	x	1	0	0	0	1	3
2	1	x	1	0	1	3	1
3	0	1	x	1	0	2	2
4	0	0	1	x	0	1	3
5	0	1	0	0	x	1	3

other, or, in other words, the sums of the row values from the path matrix. Table 2-2 is the path matrix for Figure 2-2(g).

This method is more effective than the adjacency matrix in correctly identifying Node 4 as the most inaccessible space. In what follows, access ranks of nodes are based on path matrices done for each house in the sample. A disadvantage of this method is to be found in the fact that for larger graphs, obtaining correct measures of the shortest routes between nodes is a tedious and time-consuming task, and I have caught myself making errors in some cases (the largest house in the sample required a 91×91 matrix, which took hours to complete). More complex methods for accessibility ranking are available, including "powering" the matrix to account for relative accessibilities measured in terms of 1-step, 2-step, to *n*-step trips, where steps refer to edges (cf. Haggett and Chorley 1969: 38–40). I concluded that, when dealing with a large sample of houses, the path matrix method proved an optimal combination of useful results with ease of application.

The resultant values of the accessibility ranks can be used in two ways. In some cases I was able to compare the accessibility of different kinds of spaces (e.g., kitchens) across houses and samples, in order to assess the degree to which certain types of activities are located more centrally or more peripherally in the house (cf. Hasell and Peatross 1990; Spain 1992). This type of analysis can be expanded to a consideration of the degree to which particular spaces "control" interaction in a dwelling. One such measure, referred to by Hillier and Hanson (1984: 108, passim) as "relative asymmetry," measures to the degree to

Table 2-2. Path Matrix for the Floor Plan in Figure 2-2(g)

	1	2	3	4	5	Sum	Rank
1	x	1	2	3	2	8	3
2	1	x	1	2	1	5	1
3	2	1	x	1	2	6	2
4	3	2	1	x	3	9	4
5	2	1	2	3	x	8	3

which movement between nodes is constrained by the necessity to pass through certain spaces. But an accessibility ranking calculated from the path matrix accomplishes the goal of identifying nodes that are comparatively more or less important from the point of view of movement within the structure, while requiring only a comparatively simple analysis. In light of my goal of analyzing a large sample of houses, I found it not worthwhile to utilize more complex and time-consuming techniques like some of those suggested by Hillier and Hanson.

Of most relevance to the issue of complexity is the number of accessibility ranks of a house, derived from the path matrix. The number of accessibility ranks is a measure of the number of nodes in the graph occupying structurally unique positions. I use this as a measure of complexity based on the following reasoning: Assume a house consists of a courtyard, off of which there are 10 rooms, each with one passageway connecting it to the courtyard (many Middle Eastern dwellings would look something like this). This would constitute a reasonably large house, comparatively (with 12 nodes), but is not structurally complex because each room occupies a redundant position in the graph (i.e., each is simply connected to the same courtyard), and thus the path matrix would show two ranks, that of the courtyard (Rank 1) and that of all the rooms (all tying at Rank 2) (the path matrices do not include the outside node). A spatially more complex graph built on this same base might include the addition of a stairway (transitional space) leading to a landing (also a transitional space) and in turn to two primary rooms on an upper floor. This graph would contain five accessibility ranks derived from the path matrix and is obviously a more spatially complex house. The relationship between spatial complexity as measured from the number of accessibility ranks, and complexity as measured by the Specialization Index, is discussed below, once I have described my sample of houses.

Another related view of complexity has to do with vertical complexity, and is measured as the number of hierarchical levels. Viewed from the back-to-front perspective used in this study, the number of hierarchical levels is related to the degree of separation of front-oriented, "public" and back-oriented, "private" spaces of the dwelling, as well as the degree of differentiation within front and back regions. To measure hierarchical depth, the graph representing the structure is

organized to show the relative position of each node in the hierarchy of nodes, from the front of the structure to the back, where each additional step from the front toward the back is counted as one hierarchical level. Hillier and Hanson (1984: 149) call this a "justified gamma map," but I will refer to them as "hierarchical graphs" to avoid a cumbersome phrase. Figure 2-3 shows a floor plan and its hierarchical graph. Each horizontal cluster of nodes in the hierarchical graph is a hierarchical level of the dwelling (excepting the outside node). The example in Figure 2-3 illustrates two hierarchical levels. Presumably, one of the things hierarchical depth is related to is the number of levels of emic privacy gradients (or "penetration gradients" in the phraseology of Rapoport 1977: 289–298), but, unfortunately, little information on emic aspects of front–back separation was available to me from the sample of houses I coded. I discuss this more below, once I have described my sample of houses.

SELECTION OF THE SAMPLE OF HOUSES AND COMMUNITIES

My goal was to use published sources from which I could assemble a sample of rural vernacular houses from several geographical areas, samples that would be reasonably representative of the variation of houses in each of those areas. Further, I wanted to be able to link the information on housing traditions to community ethnographic data, to enlarge my understanding of the social and economic factors that influence house form and function. There is a growing literature on rural houses from many parts of the world (and including urban residences) that I could draw from, but my own research interests directed me to

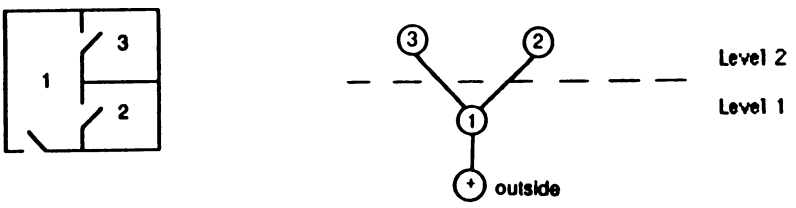


Figure 2-3. A floor plan and its hierarchical graph, illustrating two hierarchical levels of structural depth.

an emphasis on "peasant" villagers who are participants, cognitively and materially, in civilizational traditions long characterized by complex market and state institutions. Therefore, in my search for sources, I looked first at the literature on China and adjacent areas, South Asia, Southwest Asia, Mesoamerica, the Central Andes, and Europe. I decided to exclude the latter two areas because I found only relatively few and scattered data sources, but I hope to extend my study into these two areas in the future. My research orientation led me away (at least for now) from the rural housing traditions of more "tribal" areas of sub-Saharan Africa, in spite of the fact that they are extremely interesting and are in some cases well described in the vernacular architectural and ethnographic literatures. Similarly, I excluded many areas of Southeast Asia, and Native North America, among other areas where an abundance of information is available that could be used for comparative research. The method developed and utilized here can be readily applied to housing traditions in areas I did not include.

The data for this study are in two parts. One is a community sample consisting of my coded data from 26 ethnographic studies of rural communities (the basic information for this data set is found in Appendix 1). The other consists of coded data from 324 actual houses, selected from both ethnographic and vernacular architectural sources (the basic information for this data set is found in Appendix 2; locations of the coded cases are indicated in Appendix 3). The community sample allows me to place the various housing traditions within their respective social contexts at community, regional, and macroregional scales of interaction.

Because so few published community ethnographic sources contain detailed information on houses and house life, I found myself scouring the relevant ethnographic literature from each area, searching for sources suitable for my needs. Rather than use preexisting cross-cultural samples, such as the Human Relations Area Files (I made some use of HRAF because some sources are readily available only in those files), or the Standard Cross-Cultural Sample, or similar established samples, I had to create my own sample by looking at as many sources as I could find from each area, checking each to determine if the necessary information was reported. Searching for sources (including the searches for community ethnographies and sources on houses)

required months of intensive effort and was one of the most difficult aspects of the project.

I based my selection of cases on the following criteria:

1. For both the community ethnographies and house descriptions, sources are of high quality and recognized as such in their respective anthropological and architectural literatures. The community ethnographic sources are all written by professional anthropologists who spent sufficient time in the communities they studied to enable them to write wide-ranging general ethnographic accounts, although, given the large number of variables for which I was coding, there are missing data in some cases. A prime criterion for the ethnographic accounts was that they include detailed information on houses and house-life, including, ideally, floor plans, facade illustrations, descriptions of room functions, descriptions of house symbolism, and building materials, among other features (in a few cases I had to settle for textual descriptions of houses in reports lacking suitable illustrations). Additionally, I required information on the nature of variation between simple and costly houses, and how variation is viewed cognitively. My criteria severely limited the number of usable sources because most ethnographic accounts fail to describe the material and cognitive dimensions of house life.

2. In order to enhance the reproducibility of the study, I coded only readily available published sources. Thus I excluded a number of potentially valuable local-governmental or development-agency housing surveys. I carefully reviewed reports of this type I was able to acquire, to see whether there might be aspects of housing traditions described that are not reported on in the published literature, but I did not include such sources in the coded data. Reports of this type are not only difficult to obtain (they are usually distributed in small numbers to a restricted audience), but, also, I could not always be certain of the quality of the data they report. Some government-sponsored reports describe a degree of affluence that is unlikely and thus could be interpreted as propaganda.

3. I contextualize houses described in the community ethnographies by comparing them to the housing traditions of larger regions of which they are a part. To do this, I developed a data set that consists of descriptions of actual houses, usually obtained from sources written

by architects or anthropologists describing rural vernacular houses. These data (the "house" data set) allow me to evaluate the representativeness of the houses in the community sample and allow me to describe variation in housing traditions in certain areas lacking suitable community ethnographic sources. In developing the house data set, I looked for sources that, so far as I could tell, describe actual houses (rather than ideal types, although in some cases it is not easy to make the distinction from the published descriptions). The houses described in the house data set are based on field observations and thus are distinct from the "basic" and "costly" house descriptions included in the community data set (which I describe in more detail below), that are "ideal-type" houses I developed from information in each ethnographic source, and that are presented as a way to indicate the general nature of variation in houses within each community. Where actual residences are described in the community-based sources, they were given numbers and are included in the house data set.

4. This is a study of rural houses and households, so I excluded sources describing urban houses. In part, this choice reflects my problem orientation, but it also reflects the fact that I regard this work as an exploration in method and theory building, and as a consequence I wanted to minimize the number of variables I would have to account for, by controlling for certain factors that would be more likely to come into play in urbanized settings. In particular, by studying rural communities, I could largely eliminate the effects on housing decisions of differentials in land prices of the sort that are likely to be found in larger and more complex communities. My sample also avoids the complicating factors of rental housing and government-subsidized housing. The houses reported on below are largely household-owned, and decisions relating to the costliness of houses pertain mostly to physical aspects of the house itself (size, decoration, and building materials), rather than to the cost of land. I hope the method I develop here can be expanded eventually to account for the complicating factors found in urban settings, but I do not attempt that in this report. Of course, it is difficult to draw a precise line between what I would define as a rural village on the one hand, and a small town on the other, because villages may have a few "urban" (central-place) functions, such as a local market or shops, and these perhaps influence

land value to a small degree. A few of the communities reported on below have low-ranking central-place functions, and in some cases there are households present that engage primarily in craft specialization and/or trade, but none of the communities are "urban."

5. I selected cases with an eye toward capturing the variation in rural community life and houses within each region. This was difficult to do because so few sources fit my needs. But I did at times exclude potentially usable sources if it appeared that they were highly similar to already-coded sources. I selected houses for coding in part on the basis of whether I felt they allowed me to assess the degree of variation found within a region, particularly that relating to wealth and status variation. Especially in the vernacular architectural literature, there is often an excess representation of larger, more decorated houses; architects apparently feel that such houses have more intrinsic artistic or architectural merit. In spite of my selectivity, this bias may still be present in my sample, an issue I address below.

6. In identifying codable sources, I excluded rural communities practicing agricultural strategies such as slash-and-burn agriculture or full-time herding. These were likely to be less sedentary communities in which a major aspect of housing decisions relates to ease of movement of the settlement and house. As will become clear later, one of the variables I tried to understand is the degree to which households invest in costly, substantial houses, something that less sedentary households are not likely to do under any circumstances.

When I started this work, I envisioned assembling a community sample larger (closer to 40 or 50 cases) than what I eventually coded (26 cases) because there are obvious statistical advantages in a larger sample size. But not only was I unable to find more usable sources from regions of most interest to me, I also found that a sample of about this size was as large as I could manage, both in terms of the complexity of the coding task and the analysis, given the large number of variables I coded for each community (originally 289 variables, not all of which are reported on here). The house sample has more cases (324), but the descriptive detail derived from each house is less, amounting to some 70 variables in my original coding. This, too, represented a substantial coding effort and also stretched the limits of my project's resources. Are these samples large enough and represen-

tative enough to assure that the conclusions I make are valid beyond the confines of the sample itself? The best way to consider validity is to introduce my samples and discuss them in light of what is known about rural villages and houses in each of the regions considered.

China

Four Chinese communities, and one Taiwanese, are included in the community sample. They are West Town (Yunnan Province), Kaihsien-kung (Jiangsu Province), Kao Yao (Yunnan Province), Taitou (Shandong Province), and Yen-liao (southern Taiwan) (CH01-05 in my numbering system) (Appendix 3 shows their locations). References and basic descriptive data for the communities are found in Appendix 4. All were studied in this century, and all but Yen-liao pertain to the prerevolutionary period (few suitable sources are available for postrevolutionary China). The sample is somewhat biased in the direction of southern China; two of the communities are from Yunnan Province, and the Taiwanese community is descended from southern Chinese Hakka-speakers. This presents somewhat of a sampling problem because some areas of southern China (by which I mean south of the Yangtze) have a tendency toward comparatively larger and socially more complex households (Freedman 1958, 1966; Goody 1990: 104–110; Taeuber 1970), and some southern houses are comparatively larger and decoratively more elaborate than those from other Chinese regions, particularly the central regions (Dunzhen 1980: 81–83, passim; Knapp 1986, 1989: Chapter 4). Hakka houses and the Taiwanese houses built within that tradition are extremely large (Dunzhen 1980 [his Figure 115 is a house with 108 rooms on the lower floor alone!]; Knapp 1986: 45–49). The one house in my sample from Taiwan (from Yen-liao, CH05) is extremely large, with 91 nodes, making it the largest dwelling in the entire house sample. But this is not unrepresentative of Taiwanese houses. Gallin (1966: Figures 1 and 2) describes houses with 13 and 42 rooms from Hsin Hsing, a Hokkien community on the west-central coastal plain. Although there are smaller houses on Taiwan, what little comparative data I could find indicate a tendency toward larger structures (cf. Knapp 1986: Chapter 4).

West Town, Yunnan Province (CH01), has some houses that are extremely large and complex, in part reflecting the fact that it is in

south China, but also the fact that it is a larger community than most in my sample, had more central-place functions than most villages, and its occupants were comparatively wealthy. For these reasons, in some cases I exclude the community from my analyses (along with Yen-liao in some cases). Two additional south China sources include descriptions of houses, and so perhaps could have been included in the sample (Kulp 1925 and Hsiao-Tung Fei and Chih-I Chang 1945), but they were excluded so as not to further augment the sample's southern bias. Ideally, the sample would have included a northern China community, but only one source comes close to meeting my coding needs (Gamble 1963), and it lacked a sufficient description of houses.

Nineteen houses were coded for China, an unfortunately small sample, but all I was able to locate that were adequately described for my purposes (case numbers for houses by major region are found in Appendix 2). Most are found in the wide-ranging study of Liu Dunzhen (1980), which, for a vernacular architectural source, is quite good in discussing a broad range of houses from very small to large and elaborate. The coded examples extend from south to north China (Appendix 3) and range in size from 1 to 70 roofed rooms, averaging 14.6. Without CH004 and CH019, the large dwellings from West Town and Taiwan, the sample mean is 8.9 roofed rooms. Buck (1937: Tables 3-A to 3-C), who surveyed over 16,000 farms in 141 localities across China, found a range from 5.4 rooms (average) for small farms, to 14.4 (average) for large farms (these numbers include, as I do in my count of roofed rooms, rooms used for agricultural purposes). Buck's average for medium farms was 9.4, close to my average value of roofed rooms, excluding the two largest structures. Gamble's (1963: 18) north China village houses were smaller. His Village "C" contained an average of 5 *chien* (rooms), and a range from 1 to 41. The range in my sample as a whole is from 1 to 70 rooms; excluding the two largest dwellings, the range in my sample is like Gamble's, from 1 to 37 rooms. I conclude that my sample of Chinese houses is slightly biased in the direction of larger houses, particularly when I include the two exceptionally large houses I coded. When these are excluded, however, the sample comes close to correctly representing the variation in Chinese houses as it can be determined from these corollary sources.

Japan, Vietnam, Thailand, and Java

Four community studies were included in my sample, even though they are located beyond the scope of the area encompassed by the house data set. These are Tamansari, Java (IP01, IP standing for "Insular Pacific"), Niiike, Japan (IP02), Chiangmai, Northern Thailand (SEA01, SEA standing for South East Asia), and Khan-Hau, South Vietnam (SEA02) (references are in Appendix 4). I included the four even though I lacked sufficient data on houses in their respective regions that I could use to evaluate regional variation (although a few scattered sources I refer to later proved helpful in this regard). The only houses included in the house data set from these regions are the two houses described in the Tamansari ethnography (IP001 and 002), two houses from Chiangmai (SEA001 and 002), and five houses from Khan-Hau (SEA003–007). This is a small sample and should not be considered representative of the variation in their respective regions. The community studies and their houses were included in my study because they represent ethnographic sources of exceptionally high quality and thus contribute to my ability to evaluate hypotheses concerning social factors operating at the community level that impinge on housing decisions.

The often large and complex pole-and-frame houses of "tribal" upland Southeast Asia, often built on stilts, are well described in the ethnographic and vernacular architecture literature (cf. Clément-Charpentier and Clément 1988; Walker, ed., 1975; the chapters by Bernot, Charpentier, Clément, and Pedersen in Izikowitz and Sørensen, eds., 1982; and sections of Waterson 1990). But these are found in areas characterized by less sedentary farming adaptations, and so range outside the scope of this work. Rural Japanese traditional houses (*minka*) and house-life are described in an extensive literature (Engel 1964; Itoh 1980; Jeremy and Robinson 1989; Kawashima 1986; Nishi and Hozumi 1983), but a sample that I might derive from this literature would clearly have a bias toward the larger houses of wealthy families. Judging from my review of the literature, the houses I coded from descriptions in Beardsley, Hall, and Ward (1959) for Niiike seem to represent houses typical in a zone of peasant villagers engaged primarily in rice farming, although, as they point out (Beardsley, Hall, and Ward 1959: 4), Niiike is in a comparatively prosperous farming

area. The houses described by Norbeck (1954), also from a village in Okayama Prefecture, are nearly identical to the Niiike houses.

The houses described from Chiangmai, Thailand (SEA001 and 002) are a common type of substantial teak dwelling found in northern Thailand, but the examples included in the coded data are evidently quite large, and their residents are comparatively wealthy (based on the comments of J. Potter 1976: 58–59). The houses from Tamansari, Java, range from relatively modest (IP001) to fairly costly (IP002), as seen from the context of variation within this community (Jay 1969: Figure 4.1). The Vietnamese houses represent a range from small (SEA003) to elaborate (SEA007), again, given the variation within the particular community (Hickey 1964: Figures 3 and 13). This discussion is meant to provide some background to the variation found in the coded houses from these regions, but, as I emphasized previously, I will make only limited comparative use of this group of houses in the absence of a more satisfactory, representative sample.

South Asia

My sample of South Asian communities is seriously incomplete, consisting of Thyagasamuthiram, Tamil Nadu, South India (SA01) ("TM" below), Mohla, Punjab, Pakistan (SA02), and Mohoriya, Central Nepal (SA03) (references are found in Appendix 4). I was extremely disappointed at being unable to code more South Asian village sources, particularly sources from northern India, but suitable descriptions of houses and house-life are rare in the community ethnographic literature. Fortunately, a comparatively large number of sources was available for coding the house sample ($N = 34$) (references are in Appendix 5), the largest group coming from the 1961 Census of India (SA011–038, 048, 049). Although this is not a probability sample in a strict statistical sense, the contributing authors do attempt to describe a wide range of houses in terms of size and complexity. Nepal (and to a lesser degree the adjacent Indian state of Jammu and Kashmir) has a well-developed tradition of vernacular architectural literature (from which I coded SA004–009, 039–047; henceforth I refer to this group as the "Nepal sample"). These houses are so unlike their counterparts further south in India and Sri Lanka that in my subsequent discussions of South Asia I discuss two samples, "Nepal" and "India." I suggest this

division reflects a real difference in housing traditions rather than sampling error, although I lack large-scale survey data to evaluate the representativeness of the two samples. The Nepalese houses, which in many cases are large and structurally complex, are described in a wide-ranging literature that encompasses several environmental zones and ethnic groups (sources I used are in Appendix 5). Houses from further south in India (and from Sri Lanka) are often considerably smaller, excluding the relative minority of Brahmin and other high-caste houses, but even these are comparatively small as elite houses go; for example, the Brahmin house from TM (SA001) has only 12 roofed rooms. Additional sources not coded but that illustrate the comparatively small sizes of these houses include Dube (1955), Fukutake et al. (1964: Figure 9), Leach (1961: 59–60), Mahadev (1976), Rege et al. (n.d.: 7), Rengarajan (1976: Tables 22 and 23), and Yalman (1967: 104).

I am fortunate in having an additional source of comparative information that can be used to evaluate the representativeness of the sample of Indian houses. One of my students, Uma Chandru, conducted a study of houses from two villages in Karnataka, South India (Chandru 1989). Her sample of houses is based on a stratified random sampling strategy designed to faithfully reflect the housing variation present in the two villages. The values of mean number of roofed rooms per house for the two villages (4.1 and 5.3) bracket my overall sample value of 5.2 rooms for India and Sri Lanka. I suggest that the literature on South Asian houses that was available to me for coding is sufficiently representative that I am justified in using the sample for comparative purposes, and in separating the sample into two populations reflecting the substantial differences between the Himalayan region and everything else.

Southwest Asia

I include within this broad area communities and houses I coded from Iran, Iraq, Syria, Turkey, Jordan, Lebanon, and Yemen; the few Egyptian houses I coded are also included in this group (sources are found in Appendixes 4 and 5). Overall, this is my largest and most varied regional sample. This area is comparatively well known architecturally and ethnographically, allowing the researcher to draw on several dis-

tinct but complementary kinds of sources. This includes, besides a well-developed literature on the evolution of houses since the beginning of the Neolithic that is not discussed here, a substantial literature on vernacular architecture, for example Michell (ed.), 1978, and the series titled "The Changing Rural Habitat," from the seminar "Architectural Transformations in the Islamic World," sponsored by the Aga Khan Award for Architecture (e.g., Horne 1982). Other useful architectural sources consulted but not included in the coded sample include Boccianti (1979), Campo (1991), Christensen (1967), El-Khoury (1975), El Safty (1981), Fuchs and Meyer-Brodnitz (1989), Gulick (1955: 34–37), Hallet and Samizay (1980), Lewcock (1976), Mazumdar and Mazumdar (1984), Ragette (1980), Rainer (1977), and Thoumin (1932, 1936).

Architectural and ethnographic salvage projects in reservoir development areas provided some codable data on houses, including the projects at Keban, Turkey (SWA173–174), Aşvan, Turkey (SWA176–180), and Egyptian Nubia (SWA149–161). Several of my community sources are traditional ethnographic village studies, including Hasanoğlan, Turkey (SWA01), the Dokan dam area, eastern Iraq (SWA05), Alişar, Turkey (SWA07), Tell Ṭoqaan, Syria (SWA08), and Gilân, Iran (SWA09). Owing to the intense interest in the cultural evolution of early civilization in the Mesopotamian region, several ethnoarchaeological research projects have studied contemporary villages to help archaeologists better interpret their excavated data. Given the explicit goal of linking social variables to material culture, including houses, these ethnoarchaeological projects provide among the most abundant and highest-quality data I was able to utilize in my research. The sources I coded include Baghestan, Iran (SWA02), Hasanabad, Iran (SWA03), Aliabad, Iran (SWA04), and Darnaj, Syria (SWA06).

Although Islamic practice exerts a powerful influence on all the housing traditions represented in my Southwest Asian sample, and brings several common themes to houses and house-life over this broad area (I discuss this more below), there is nonetheless considerable variation from region to region. I was initially at a loss as to how to deal with regional variation, but I knew that some kind of partitioning would be required. It was clear that lumping the entire sampling together would mask differences that might later prove useful for

comprehending variation in household behavior. To begin my comparative discussion, I decided it would make sense to divide the sample into two broad groups, one of which, the larger group (the "main series"), represents a very common type of Middle Eastern house. The smaller sample (SWA "other") lumps a variety of localized and distinct architectural traditions; as I point out below, I believe it is reasonable to lump these latter samples because, by and large, as a whole they display certain properties that strongly distinguish them from the main series.

The main series, consisting of 144 houses (SWA004–147), is a common type of house usually illustrating the following features: (1) load-bearing walls of mud-brick construction, with narrow rooms spanned by flat roofs made of beams and mud (but sometimes domed mud roofs); and (2) one story of rooms (sometimes two), variably positioned around and facing onto an external walled courtyard (by external I mean that the courtyard is external to the rooms rather than enclosed by the rooms; in some cases the addition of many rooms around the court may give the appearance of an internal court, as is seen, for example, in Alişar, Turkey [Morrison 1939: 77–78]). "Main series" houses are found over a broad zone extending from Syria and parts of Turkey in the west (including Darnaj [SWA06] and Tell Toqaan [SWA08]), in addition to Alisar [SWA07]), east through much of Iraq and Iran (and including the large series of houses coded from Baghestan [SWA02], Hasanabad [SWA03], and Aliabad [SWA04]), and extending eastward into Pakistan (and including Mohla [SA02]) and the Indo-Gangetic Plain (Misra 1962).

My Southwest Asian "other" sample does not encompass by any means all of the local rural architectural traditions of Southwest Asia that are distinct from the main series (cf. Horne 1982), because I was restricted to sources that met my coding requirements. But it is a large (N = 76) and broadly based sample of houses. Among the major types are:

1. Gable-roofed, wattle-and-daub houses of Iran's Gilân region (SWA09, houses 218–220).
2. Enclosed rectangular houses like those of Hasanoğlan, Turkey (SWA01, houses 001, 002, 003, 173, 174, and 176–180 [this latter group combines some of the features of the courtyard houses of the main series]).

3. Central-hall and "liwan" houses of Jordan and Lebanon, characterized by rooms arranged around a central roofed space (193, 194, 200–204).
4. The varied but often large and multistoried houses of Yemen (162–172).
5. Egyptian houses that range from small interior courtyard houses of the Lower Nile (175, 181–192, 205–215) to the larger and elaborately decorated Fedija and Kenuzi houses of Nubia (149–161).

I describe both the main series and the other regional types in more detail during the course of my later comparative discussions.

Mesoamerica

This area is well known ethnographically (cf. Chambers and Young 1979), but architects have not shown the degree of interest in the rural vernacular that they have shown, for example, in Nepal or China. I was fortunate in being able to code a series of community studies representing a variety of subregional culture areas, including highland Maya (Zinacantan; MS001), lowland Maya (Chan Kom; 02), Sierra Tarascan (Cherán; 03), lowland Totonac (Tajin; 04), and the mixed Indian–Mestizo (hispanicized) community of Tzintzuntzan (05), Michoacán (bibliographic sources are in Appendix 4). I had hoped to include community sources from the central plateau of Mexico and the southern highlands of Mexico, but was unable to locate suitably detailed sources.

The house sample for Mesoamerica is moderately large ($N = 27$) (sources are in Appendix 5). In addition to houses coded from the community sample, several studies provided field observations codable for the house data set. Wauchope's (1938) wide-ranging survey of Maya houses serves as a useful introduction to this housing tradition, as well as serving as a coding source (005–010). Several similar ethnographic studies were coded from regions that unfortunately did not get representation in the community sample, including highland Zapotec (013–015), Basin of Mexico (016–023), Otomi, central Highlands of Mexico (024–026), and Huave, Isthmus of Tehuantepec (027).

As will become clear in my comparative discussion below, a

singular feature of the Mesoamerican houses in my sample is their small size, as measured in number of nodes, rooms, and square meters of roofed area. I suggest that this is not a result of a sample bias, but instead reflects a general Mesoamerican pattern. Several corollary sources document the small sizes of Mexican and Guatemalan rural houses. In one of the earliest descriptions of rural houses, conducted by Frederick Starr (1899), a typical Tlaxcalan dwelling is described as consisting of a main structure, a kitchen, a granary, and sometimes a steambath (Plates XLIV, XLV, XLVI). Mixtec and Zapotec houses also consisted of one or two rooms (cf. Plates LVI, LVII). One or two-room houses are described by Redfield and Villa Rojas (1939: 111), Villa Rojas (1945: 52), and in Moya Rubio (1988). In a survey reported on by Lopez Alonso et al. (1982: 17), 90% of the houses in Caxhuacan, Puebla, Mexico, had only one or two rooms. Based on Mexican rural census data, Whetten (1948) reports that houses averaged 2.3 rooms per house (p. 289), a figure that is smaller than my sample average of 4.4 rooms. Amazingly, my Mesoamerican sample, which has the fewest number of rooms per house of all the world areas I studied, might actually overestimate the sizes of houses in the population as a whole! However, Sutro (1983) and Sutro and Downing (1986) document an increase in the sizes of houses of Diaz Ordaz, Oaxaca, Mexico, over the last 20 years; the average of the three I coded from Sutro's dissertation, dating to 1981 (013–015), is 8.6 rooms. Although there are still many small houses in rural Mesoamerica, the reason my sample is different from what is reported in earlier summaries like Whetten's may be an increased house size during this century.

SCALE, INTEGRATION, AND COMPLEXITY: A PRELIMINARY COMPARISON ACROSS REGIONS

Of my regional samples of houses, only the Insular Pacific and Southeast Asian samples are so seriously deficient in terms of representativeness that they cannot be included in a comparative discussion. Although it would have been desirable to have more examples from the remaining areas, I proceed on the assumption that these six samples (Mesoamerica, Southwest Asia "main" series and "other," India,

Nepal, and China) are reasonably representative of the variation in their respective populations, at least in terms of the main features of scale, integration, and complexity. The following is a preliminary comparison of the study regions in terms of these summary variables, based on the house data found in Appendix 6.

Scale

The major scale measures are number of roofed rooms, number of nodes, and square meters of roofed area (Table 2-3). I also collected data on total compound area, but found this datum often missing, particularly in architectural sources that focused attention on the house itself rather than on its immediate surroundings. To maximize the comparability of these scale measures, I did not include in them structures used by a family but located off the graph, that is, not physically a part of the residential compound. Although households in all of these regions might at times make use of such noncontiguous spaces (for example, renting an animal shelter from another family to house surplus animals), the data were insufficient to allow me to regularly include them in the graphs of houses. Baghestan, Iran (SWA02) (Horne 1988) was the only community in the sample where households make extensive use of noncontiguous spaces, always for agricultural purposes, not living spaces. Number of roofed rooms thus refers to rooms in the residential compound itself and includes rooms

Table 2-3. Statistical Summary of Number of Roofed Rooms, Number of Nodes in the Graph, and Square Meters of Roofed Area, by Region (All Values Rounded), House Sample. From Appendix 6

	Roofed rooms			*Nodes*			*Square meters roofed*		
	Mean	*S.D.*[a]	N	*Mean*	*S.D.*	N	*Mean*	*S.D.*	N
Whole sample	7	7	321	10	8	318	106	118	203
Mesoamerica	4	3	27	7	3	27	62	67	26
Southwest Asia other	8	6	74	11	7	74	143	140	56
Southwest Asia main	7	4	143	10	5	140	70	66	52
Nepal	8	5	15	12	6	15	127	99	15
India	5	4	34	7	5	34	87	107	29
China	15	19	19	19	23	19	170	200	17

[a]One standard deviation.

used as living spaces as well as those used for agricultural purposes (storage rooms and stables). These were not separated in my count of roofed rooms because in so many cases roofed rooms are used for both agricultural purposes and as living spaces, and often the descriptions of houses simply do not allow me to adequately distinguish between uses of rooms. Where specialized agricultural uses are evident, I coded "number of specialized storage/stable rooms" (variable SR in Appendix 6).

From my previous discussion, number of nodes refers to the number of physically defined architectural spaces in the residential compound (and including the outside as one node). Typically, the defining limits of nodes are walls, but I include spaces like unwalled courtyards where the boundaries of the space are defined by the positioning of buildings around them, or where vegetation has been cut back to create an open space. Spaces like privies and unroofed animal pens are included as nodes. Wall storage niches, small animal cages, beehives, and other very small features were not regarded as nodes. Square meters of roofed area include all the rooms counted as roofed rooms, except in the case of subterranean stables, such as those found in Hasanabad (SWA03) and Aliabad (SWA04), because areal measures were not consistently provided for such features (they are counted as roofed rooms and as nodes). Thus my method implies a degree of underestimation of square meters of roofed area for these cases, compared with cases where animal stables are above-ground features that could be included in the measure of square meters of roofed area.

Figures 2-4 and 2-5 (and Table 2-3) summarize the comparative data on number of roofed rooms. Figure 2-4 includes all the Chinese houses, whereas Figure 2-5 deletes the two largest houses (CH004 and CH019). Even deleting these two exceptionally large houses, the Chinese houses are by far the largest in the sample in terms of numbers of roofed rooms. Southwest Asia "other" and Nepal are also comparatively large in this regard, whereas Mesoamerica and India, and, to a lesser degree, the Southwest Asian "main series," have fewer roofed rooms on average. Figures 2-6 and 2-7 show the same pattern, this time measured in number of nodes per graph (again, 2-7 eliminates CH004 and CH019). I will not pursue here the question of how

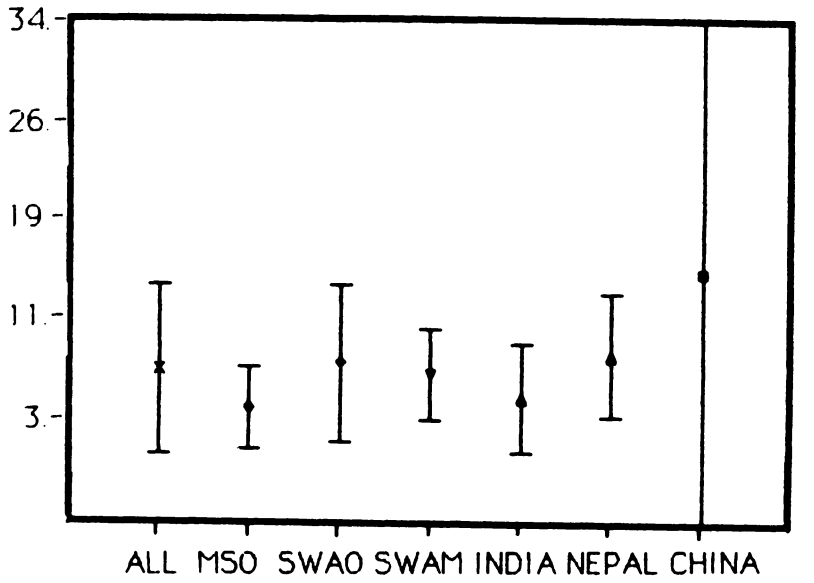


Figure 2-4. Bar graph of summary statistics for number of roofed rooms, house sample. The midpoint indicates the sample mean value, and the bracketed bar indicates plus and minus 1 standard deviation from the mean (MSO = Mesoamerica, SWAO = Southwest Asia other, SWAM = Southwest Asia main series).

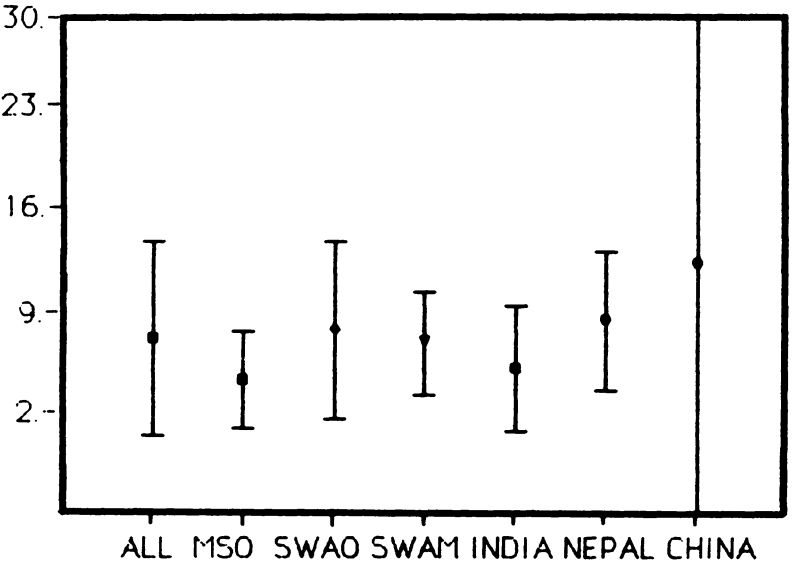


Figure 2-5. Mean and 1 standard deviation of number of roofed rooms, by region. House sample, excluding the two largest Chinese houses.

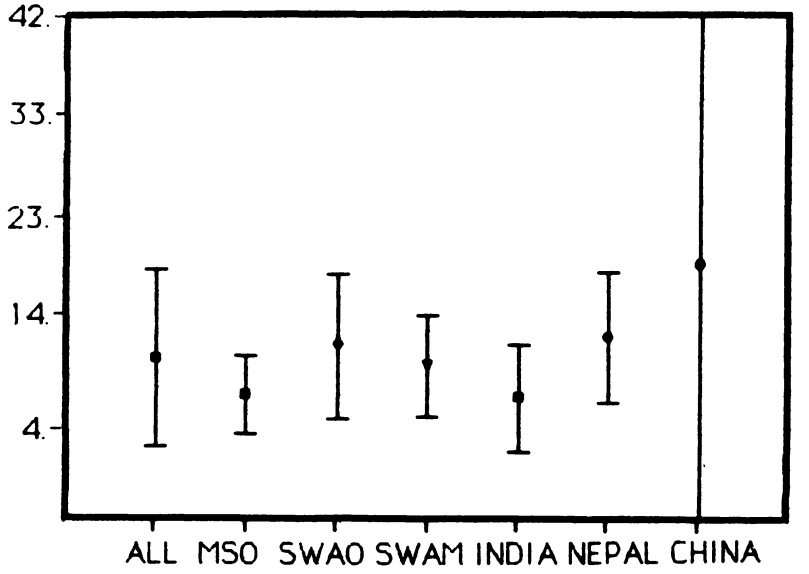


Figure 2-6. Bar graph of mean and 1 standard deviation, nodes per graph, by region, house sample.

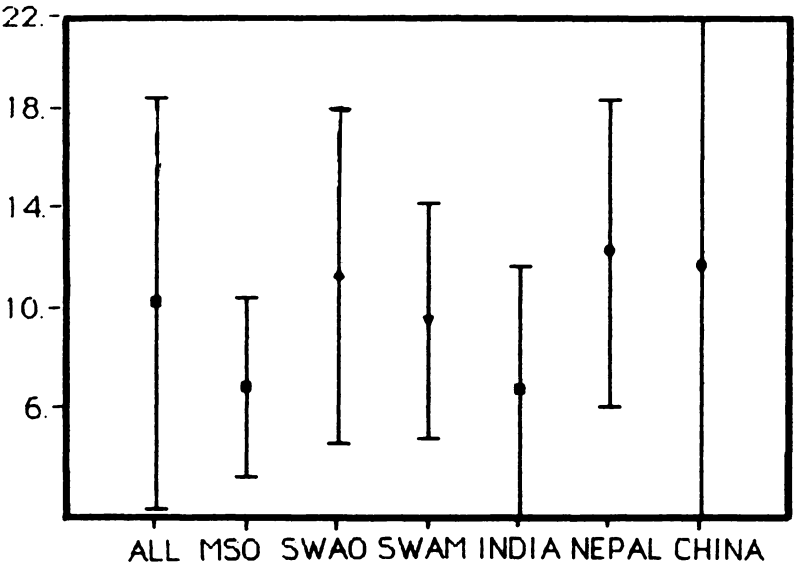


Figure 2-7. Mean and 1 standard deviation, nodes per graph, excluding the two largest Chinese houses, house sample.

differences in the values of roofed rooms and nodes might be interpreted. Overall, the two variables are highly correlated ($n = 963$ for the house sample as a whole; values range from .944 to .99 for the regional samples). Because the two measures exhibit such a high correlation, in what follows I will refer primarily to nodes as the basic measure of number of architectural spaces per house.

The pattern of scale differences seen so far is also evident in square meters of roofed area (Figure 2-8). Again, the major distinction is to be made between Mesoamerica, Southwest Asia main, and India, in contrast with the larger houses in the Southwest Asia other, Nepal, and China samples.

Integration

Circuits, which I discussed previously, are a useful measure of the degree to which rooms are interconnected through redundant pathways and serve here as a measure of integration. The number of transitional spaces (courtyards, stairs, landings, halls, and similar spaces) can also provide a view on integration because such spaces are devoted

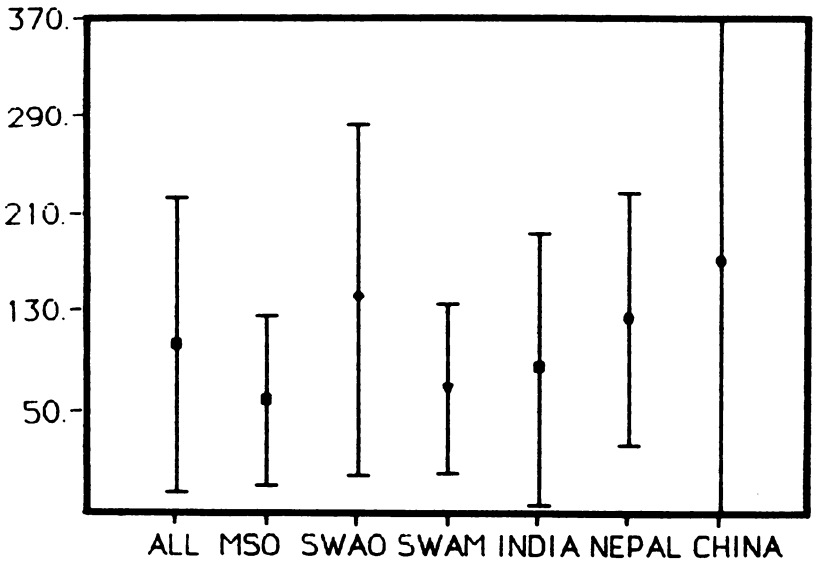


Figure 2-8. Mean and 1 standard deviation, square meters of roofed area, house sample.

largely to distributing traffic. As I pointed out previously, transitional spaces permit rooms to be connected in such a way that passage between nonadjacent primary nodes can be done without passing through other primary nodes, thus preserving privacy and allowing a greater separation of functionally specific activity areas. I include among transitional spaces courtyards, even though they typically have functions in addition to the distribution of traffic. Even halls and landings sometimes double as storage spaces but were still coded as transitional when that appeared to be their main function.

The values for mean number of circuits and transitional spaces in Tables 2-4 and 2-5 illustrate regional differences in the way house spaces are integrated. Chinese houses have on average both the highest number of circuits and transitional spaces, by far. Southwest Asia "other" also ranks high in terms of these indicators of spatial integration. Nepalese houses are also high in the count of transitional spaces, but otherwise, these houses illustrate poor integration of rooms by means of circuits. Except for the comparative lack of connectedness of the Nepalese houses, it is clear that the Mesoamerican, Indian, and Southwest Asian "main" houses have fewer features contributing to integration.

An important issue to address in comparing regional samples is the nature of the spatial structure of the larger dwellings in each area. As size (in nodes) increases, to what degree are circuits and transitional spaces added? This can be ascertained from the slopes of the regression lines, with number of nodes on the *X* axis, and transitional spaces (and circuits) on the *Y* axis. I can summarize the results of this analysis by pointing to the average differences between the two major groups,

Table 2-4. Statistical Summary of Circuits by Region, House Sample. From Appendix 6

	Mean	*Standard deviation*	N
Whole sample	.9	2.95	249
Mesoamerica	.5	.6	27
Southwest Asia other	.8	1.4	74
Southwest Asia main	.4	.7	74
Nepal	.5	.9	15
India	.6	.9	31
China	3.7	9.5	19

Table 2-5. Statistical Summary of Transitional Spaces by Region, House Sample. From Appendix 6

	Mean	*Standard deviation*	N
Whole sample	2.5	2.3	317
Mesoamerica	1.7	.8	27
Southwest Asia other	3.1	2.3	74
Southwest Asia main	2.2	1.2	139
Nepal	3.5	1.9	15
India	1.7	1.6	34
China	3.4	6.	19

China, Nepal, and Southwest Asia other on the one hand, and Mesoamerica, Southwest Asia main, and India on the other hand. Using the average slope of the regression line for each group, one would predict the following number of transitional spaces and circuits for an imaginary house with 100 nodes:

	Transitional spaces	*Circuits*
China, etc.	26	13.5
Mesoamerica, etc.	22	7.4

The Mesoamerica, Southwest Asia main, and India group would be even lower, except for the fact that the values for India are unexpectedly high (for transitional spaces, $Y = .286X - .362$; for circuits, $Y = .14X - .333$), placing them squarely within the more integrated group. As I will point to below, this is due to the fact that Indian houses are sharply differentiated into a large group of very small, poorly integrated houses, and a small group of larger, well-integrated high-caste houses, with more transitional spaces of a sort not seen in either the main series of Southwest Asia or in Mesoamerica. Because, as I pointed out previously, integration is related to costliness (cost to builder versus user), I tentatively conclude that the less-integrated houses may reflect a preponderance of building strategies that minimize cost of construction while sacrificing ease of movement and, perhaps, privacy, in the Mesoamerican, Southwest Asian main series, and Indian houses, with the caveat that a subset of the Indian houses shows comparatively more integration.

Complexity

I use three measures to indicate complexity: (1) hierarchical depth (hierarchical levels), (2) number of accessibility ranks, and (3) a measure of activity specificity by node called the "specialization index." Low values of hierarchical depth imply a "flat" hierarchy in which all rooms are relatively highly accessible from nodes near the formal entrance of the house. Higher values imply a more complex "vertical" hierarchy among spaces in which there is a greater degree of separation between front and back regions. Figure 2-9 and Table 2-6 compare the mean and one standard deviation of the values of structural depth for the regional samples. Below I discuss in more detail the possible reasons for differences between regions, but it is of interest to note at this point that variation falls down along the same lines as was noted for scale variation (and, to a degree, integration), in that China, Nepal, and Southwest Asia "other" tend toward more vertical hierarchical arrangements, whereas Mesoamerica, Southwest Asian main series, and India tend to exhibit flatter hierarchical structure. Mesoamerica and Southwest Asia main not only have small mean values of levels,

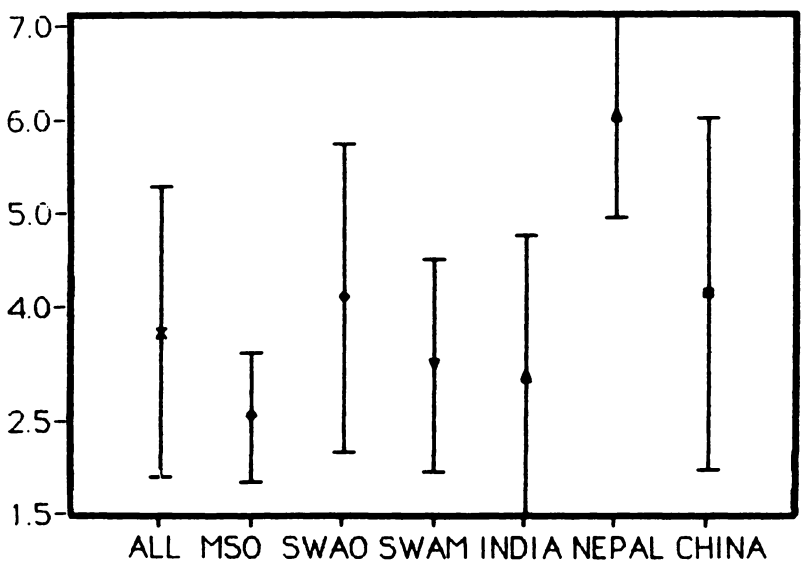


Figure 2-9. Mean and 1 standard deviation, number of hierarchical levels, house sample.

Table 2-6. Summary Statistics for Number of Hierarchical Levels (Structural Depth), Accessibility Ranks, and Specialization Index, House Sample. From Appendix 6

	Levels			*Access ranks*			*Specialization*		
	Mean	*S.D.*	N	*Mean*	*S.D.*	N	*Mean*	*S.D.*	N
Whole sample	3.7	1.6	299	5.1	4.7	247	3.6	4.1	295
Mesoamerica	2.7	.7	27	3.	1.6	27	1.7	1.7	27
Southwest Asia other	4.1	1.7	74	6.1	4.3	74	4.	4.1	65
Southwest Asia main	3.3	1.2	121	3.9	2.4	70	3.7	2.7	134
Nepal	6.1	1.2	15	7.3	4.7	15	4.4	3.8	15
India	3.1	1.6	34	3.5	2.8	33	1.7	2.3	30
China	4.1	2.	19	8.5	10.5	19	8.7	11.	16

but relatively little variation within their respective samples, whereas India sits in an intermediate position in having a greater range of values (a larger standard deviation), with nearly as much variation as is seen in the Chinese and Southwest Asian "other."

The same dichotomization is evident in the measure of graphic complexity (number of accessibility ranks) (Figure 2-10 and Table 2-6), and the specialization index (Figure 2-11 and Table 2-6), al-

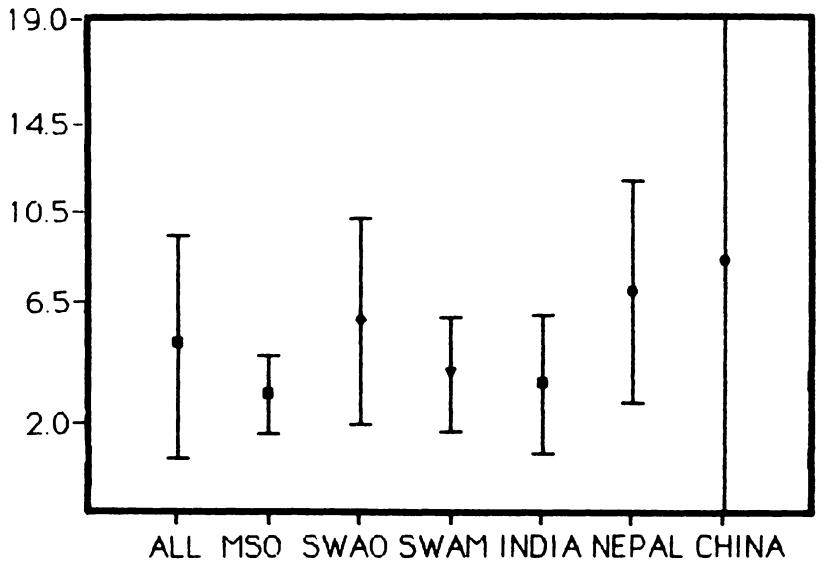


Figure 2-10. Mean and 1 standard deviation, number of accessibility ranks, calculated from the path matrices, house sample.

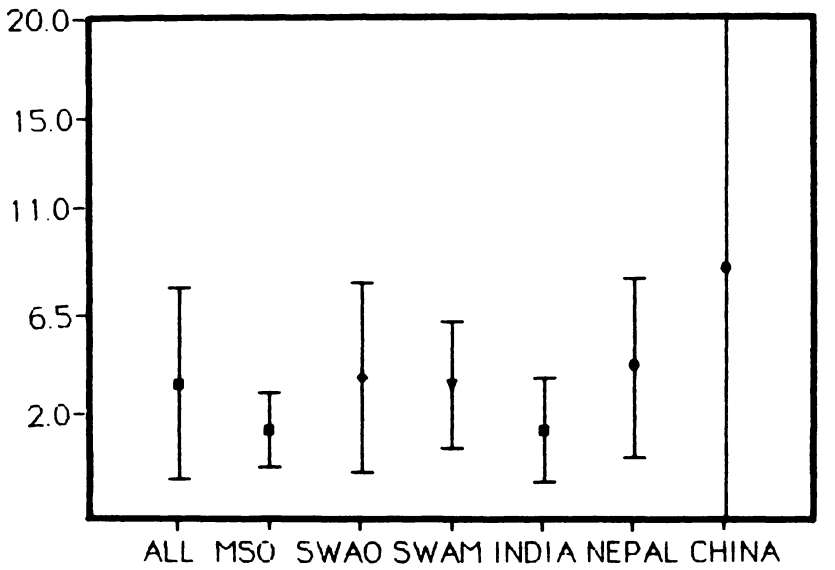


Figure 2-11. Mean and 1 standard deviation, specialization index, house sample.

though in the latter measure, the Southwest Asian main series is more like the group including the other Southwest Asian houses; its average value is similar to the group of larger houses (except for China, which has much more specialization). To avoid overlap with the integrative measure based on transitional spaces, the specialization index is a count of specialized primary nodes only (i.e., it does not include transitional spaces). Counting specialized spaces was often a somewhat subjective endeavor because descriptions of space use are rarely given in great detail, and spaces that are devoted largely to one use may at times see alternate uses.

Generally, graphical complexity and functional specialization show the same pattern of variation across regions seen in the other variables, except for the Southwest Asian main series, which has comparatively few accessibility ranks while at the same time exhibiting as a whole a comparatively high degree of functional specificity. What is the nature of the relationship between these measures? This can be elucidated with the scattergrams shown in Figures 2-12 and 2-13, where accessibility ranks (X axis) are plotted against the specialization index (Y axis). Overall, for the sample as a whole, there is a strong relationship

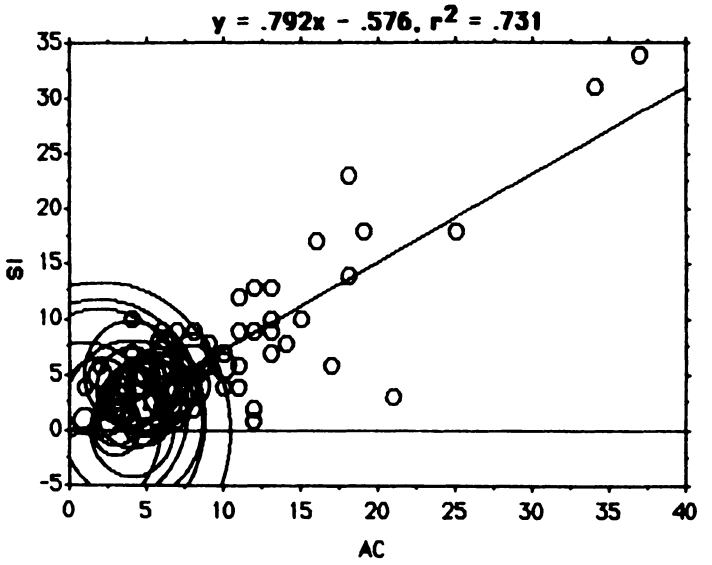


Figure 2-12. Scattergram of number of accessibility ranks (from the path matrices), x-axis, by the specialization index, y-axis, house sample. Sizes of circles on the scattergram proportionate to the number of overlapping points.

between the two variables (r-squared = .731), and a steeply sloping regression line that implies that as structural complexity increases, specialization increases nearly monotonically (Figure 2-12). But the relationship is complex in that it does not follow the same pattern in each regional sample (Figure 2-13). The samples with the largest houses, including China (which has a very linear relationship and a steeply sloped regression line), Nepal, and Southwest Asia other, all show strong relationships between the two measures, whereas of the samples with smaller houses, Mesoamerica in particular shows a comparatively weak relationship between spatial complexity and specialized functions by node. The scattergram for India shows a separation into a group of small houses with up to a few accessibility ranks and only 0, 1, or 2 specialized nodes, that can be contrasted with a group of larger houses containing four or more ranks and up to nine specialized spaces. This strongly differentiated pattern, reflecting the substantial design differences found between high-caste, particularly Brahmin, houses, and low-caste houses (discussed more fully below), produces

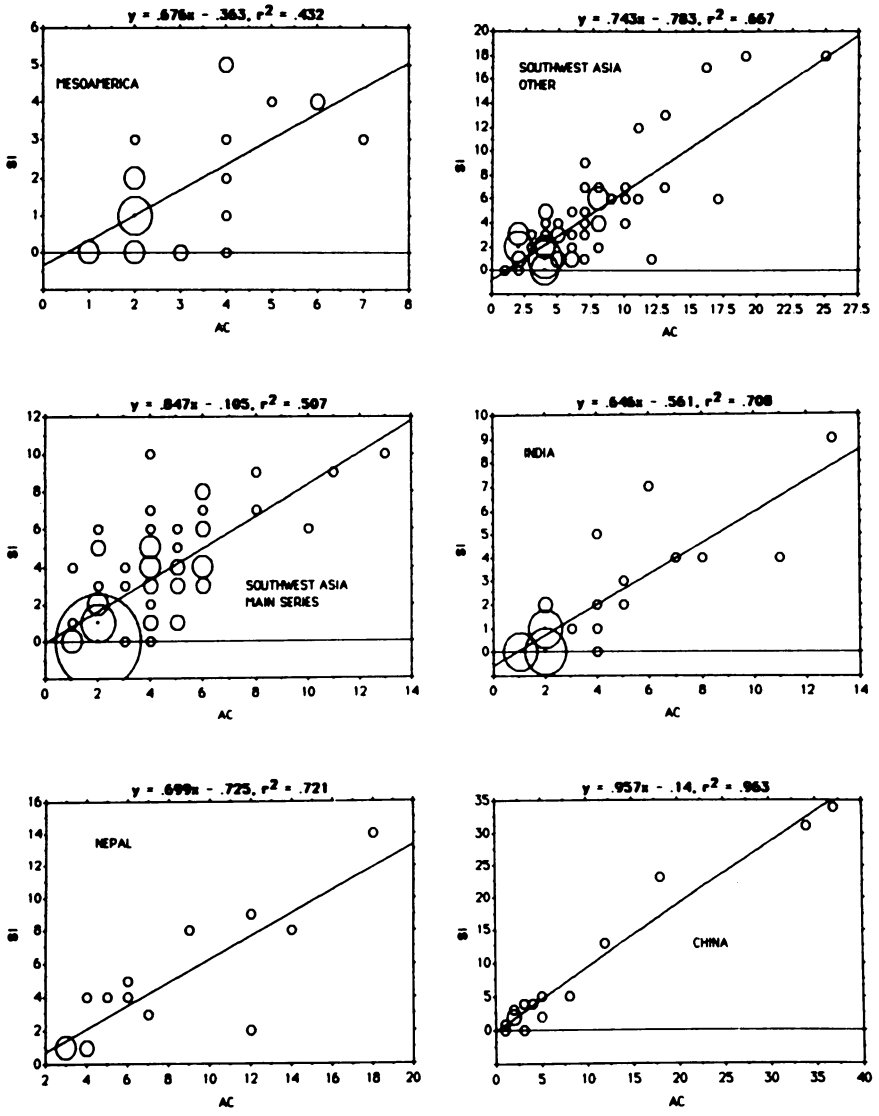


Figure 2-13. Scattergrams of accessibility ranks from the path matrices (x-axis), by the specialization index (y-axis), house samples by region.

a comparatively high correlation value and a comparatively steeply sloping regression line.

The Southwest Asian main series has the most scattered distribu-

tion (*r*-squared = .507), other than Mesoamerica, but, surprisingly, the regression line is quite steep. More spatially complex houses in this group do tend to have a fairly high number of specialized nodes. I attribute this primarily to a peculiar trait often found among these otherwise small and comparatively simple main-series houses: In spite of the fact that living spaces tend to be highly multifunctional (or "polyvalent," e.g., Petherbridge 1978), these dwelling compounds tend to have more specialized spaces devoted to agricultural production activities (storage and animal areas) than do the other comparatively small houses in my sample. The mean value for number of agricultural storage/stable spaces (variable SR in Appendix 6) in the house sample as a whole is 2.74 (SD = 2.82, $N = 297$); for the Southwest Asian main series the mean value is 3.1 (SD = 2.2, $N = 136$). By comparison, the mean value for India is .85 (SD = .27, $N = 27$), and the mean for Mesoamerica is 1.8 (SD = 2.2, $N = 21$).

Apart from the relatively large numbers of agriculturally specialized nodes in the Southwest Asian main series, these dwellings tend to be spatially simple, like those from Mesoamerica and the low-caste Indian houses, with flat hierarchical structure, relatively simple graphs, and little specialization of room functions. There are several factors that result in greater graphical complexity in the other housing traditions:

1. *Variation in household complexity.* The data on household composition for the house data set are poor (many are derived from architectural sources that do not include social information), except for the ethnoarchaeologically studied houses of the Southwest Asian main series, in which household surveys were routinely conducted. But the scattered information at my disposal indicates a tendency toward simple, smaller households in the Mesoamerican, Indian, and Southwest Asian main series, and somewhat larger, more complex households in the other three areas (this discussion is based on the data found in Appendix 2).

Nuclear households are the predominant type in both subpopulations, but the percentage of nuclear households is higher (92%) in the first group, and somewhat smaller in the group containing the larger houses (84%). China, Nepal, and Southwest Asia other also have more families per household (mean = 2.13, $N = 23$; for the other

group, mean = 1.29, $N = 155$) and more residents per house (mean = 7.43, $N = 7$; for the other group, mean = 5.96, $N = 156$), although, again, these data are depressingly infrequent outside of the Southwest Asian main series. I discuss household composition in more detail below, based on the more complete data of the community sample.

2. The houses from China, Southwest Asia other, and Nepal not only tend toward larger households with more families but often display a more complex and hierarchically structured arrangement of living and sleeping spaces reflecting a more complex household social structure. Often, this is manifested as a hierarchical grading of accessibility and structural depth of spaces related to generational, and in some cases, gender-based status distinctions (or both). These are houses in which it is often the case that special living/sleeping areas are set aside for married children, as opposed to the ad hoc sleeping arrangements, or shared sleeping spaces, often seen in the structurally simpler houses. This point is discussed in more detail below.

3. The more complex houses may have types of specialized activity areas that display strongly differentiated spatial positioning, both in terms of structural depth and relative accessibility vis-à-vis other spaces in the house. I would include here specialized guest entertaining areas (discussed more below), and liminal spaces, especially household shrines. My impression is that the presence of such spaces is related to a more complex sense of emic privacy gradients ("intimacy gradient zones" in the phraseology of Alexander, Ishikawa, and Silverstein 1977: 610–613), but the data relating to cognitive models of household privacy were disappointingly rarely available in the sources I coded.

SCALE, INTEGRATION, AND COMPLEXITY ILLUSTRATED

In what follows I discuss selected houses from the house data set to illustrate some aspects of variation in scale, integration, and complexity. This is not meant as a full explanation of the observed variation, but as an introduction to several of its constituent elements, which are discussed more fully in subsequent chapters.

1. SWA118 (Aliabad, Iran, from Kramer 1982: Figures 2.1, 4.6,

her household 61) (Figure 2-14). This house illustrates the main features of a simple main series house and what I would call a "basic house" (i.e., a minimal but socially acceptable house) in Aliabad. The household consists of a nuclear family. Its rooms (except for a back storage area) all face onto a walled exterior courtyard. It has four roofed rooms (including a covered entrance that is unusual for small houses in this community), 20 square meters of roofed area (giving a value of 10.2 square meters per person), six nodes, four accessibility ranks, and four hierarchical levels, making it somewhat more complex than most small main series houses. Both the covered entryway and the courtyard are transitional spaces, but there are no circuits. Al-

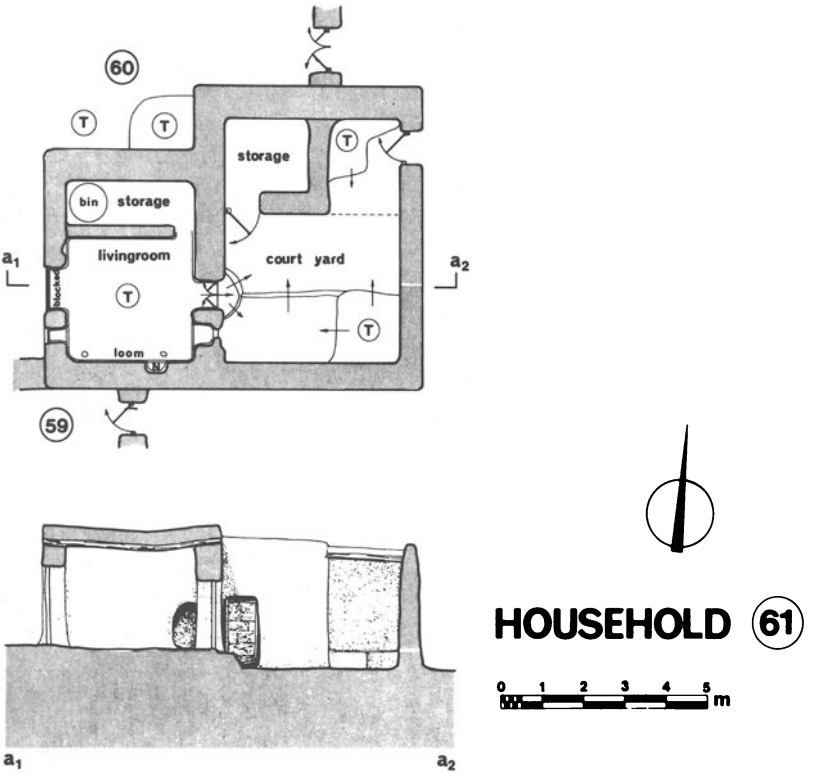
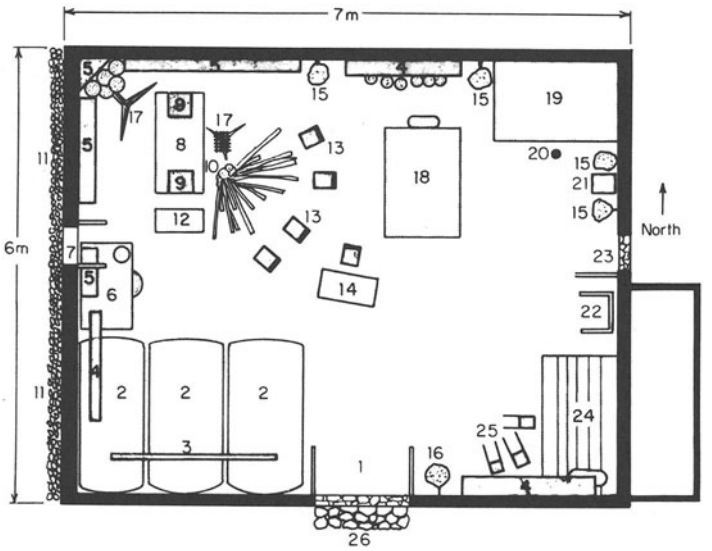


Figure 2-14. Plan and section of house 61, Aliabad (SWA04, house SWA118). From Kramer (1982: Figure 4.6). T = *tanur* (oven). Reproduced with permission of Carol Kramer and Academic Press.

though the main living area is multifunctional (living/kitchen), two of the six nodes are specialized storage areas.

2. MS0001 (Zinacantan, Chiapas, Mexico, from Vogt 1969: Figure 32, and Warfield 1963, Plans 2 and 7, the house of Antonio Peres Šulumteˡ) (Figure 2-15). This a courtyard compound housing a senior couple and a married son residing in separate one-room structures. Also facing the courtyard are two animal shelters and a structure for storage. The houses consist of one room each, which combine living, kitchen, and storage functions (the senior couple's structure is shown in Figure 2-15). The compound has three roofed rooms (it is not clear



1. Door
2. Maize storage
3. Pole suspended to hang clothes
4. Shelf suspended by rope
5. Shelf supported by a pole
6. Table and chair
7. Window
8. Grinding table
9. Metate
10. Fire and hearth
11. Firewood
12. Reed mat
13. Movable chair
14. Movable table
15. Wooden stake in adobe wall
16. Metal hanger
17. Forked stake
18. Reed mat for sleeping
19. Altar
20. Censer
21. Case of bottles
22, 25. Table and chair stored
23. Door
24. Plank bed
26. Stoop

Figure 2-15. Floor plan and house furnishings, the main house of the compound of Antonio Šulumteˡ (MS0001), Zinacantan, Mexico (MS001). From Vogt (1969: Figure 32). Reproduced with permission of Evon Z. Vogt and Harvard University Press. Copyright © 1969 by the President and Fellows of Harvard College.

from the description whether the animal shelters are roofed), 68 square meters of living area, seven nodes, two accessibility ranks, and two hierarchical levels. Because the main house has both front and back entrances, there is one circuit.

3. CH005 (Jiangsu Province, China, from Liu Dunzhen 1980: Figure 44) (Figure 2-16). This small central Chinese house is not well described, but from the illustration it does not appear to face an enclosed courtyard. It has two roofed rooms, 30 square meters of roofed area, three nodes (which would be increased to four if the area in front of the entrance were a courtyard), two accessibility ranks from

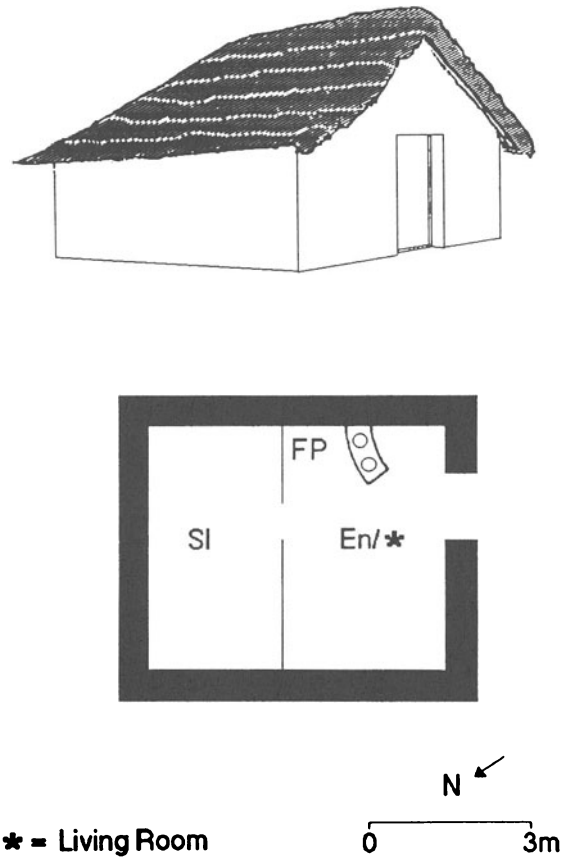


Figure 2-16. CH005, modified from Dunzhen (1980: Figure 44) (Sl = sleeping room, FP = food preparation area, En = entertaining area). The roof is thatch.

the path matrix, and two hierarchical levels. This particular house is unusual for China, not only because it is so small and structurally simple, but also because it does not conform to the dictates of the very formal "Han" Chinese style (that I describe later): Its roof line runs vertical to the facade, the front door is off-center, there is an even number of rooms, and the sleeping area is behind rather than to the sides of the kitchen/shrine area. Clearly some Chinese houses are small, structurally simple, and not particularly "Chinese."

4. SWA004 (Baghestan, Iran, from Horne 1988: Figures 6.5 and 6.7, her Household H2) (Figure 2-17). This house has an enclosed courtyard, off of which there is a covered hall used as a transitional

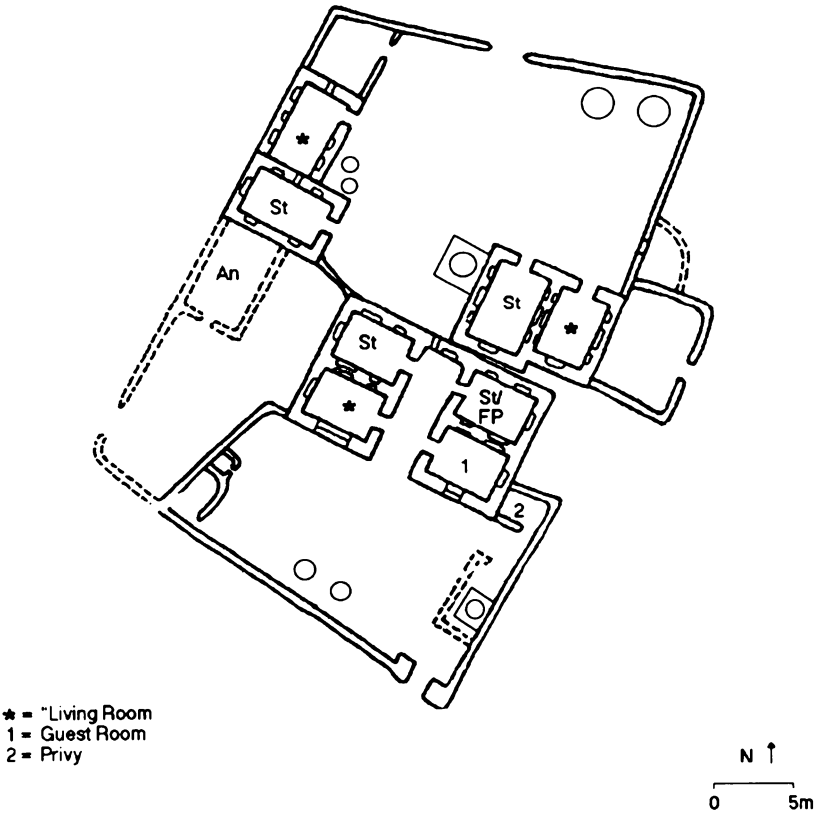


Figure 2-17. SWA004, Household H2 of Baghestan (SWA02). Modified from Horne (1988: Figure 6.17; H2 is the walled area of the lower half of the figure) (St = storage room; circles indicate hearths or ovens).

space linking the four rooms of the dwelling. There is also a privy off the courtyard, and the nuclear family residing here uses four rooms off the property for agricultural purposes. The graph of the residential compound itself has five roofed rooms (totaling 68 square meters of roofed area, 9.7 square meters per person), six nodes, four hierarchical levels, and four accessibility ranks from the path matrix. In this house, living functions (including sleeping) are found in one room separate from the kitchen/storage room, and one of the four rooms off the hall is devoted to storage. The fourth room is a guest room, an unusual use of a room in this village, but this is the most elaborate house in Baghestan, a "main series" village.

5. SA004 (Tharu, Dang Valley, Terai, Southern Nepal, from Milliet-Mondon 1981: 13–32, Figure 9, 1982: 153–156, Figures 4–7) (Figure 2-18). This is among the simplest Nepalese houses included in the sample. The house faces on a street, with courtyards in front of and behind the house (the latter of which is subdivided). The compound includes a pigsty and storage shed in addition to the house itself. Upon entering the house, one encounters a transitional space separating

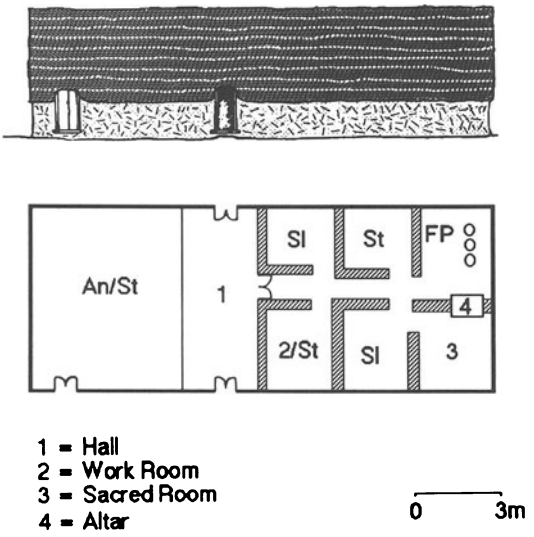


Figure 2-18. SA004, Tharu, Dang Valley, Terai, Southern Nepal. Modified from Milliet-Mondon (1981: Figure 6) (An = animal area). The roof-fill pattern indicates thatch. The wall-fill pattern indicates wattle-and-daub construction.

animal quarters to the left (with a separate entrance) and residential quarters to the right. The entry hall also serves for guest entertaining. The rooms of the residential area are found along both sides of a long hall coming off the entry hall. The rooms consist of storage and food preparation areas, living/sleeping rooms (one for each family), and a kitchen. These are often multifamily residences (housing up to 25 people), the occupants sharing a pooled economy. The kitchen, which is a sanctified space, is located at the far end of the hall, and the most distant sleeping/living room provides the only connection to the least accessible node, an altar room. The connection of this particular bedroom to the main liminal space of the house probably implies a social hierarchy of the resident families, but this is not discussed in any detail in the sources. The structure has 11 roofed rooms (extending over 140 square meters of roofed area, including the other two structures in the compound), 14 nodes, 5 hierarchical levels, and 6 accessibility ranks in the path matrix.

6. SA044 (Marpha village, Panchgaon region, Nepal, from Blair 1983: 49–53) (Figure 2-19). This house is typical in Nepal in having multiple floors. The first floor combines animal areas, storage, and food preparation. A stair leads up to a small terrace that serves as a transitional space; from here a wooden ladder gives access to the third floor. The second floor contains the main living and guest entertaining area, as well as storage spaces and a shrine room located at the sixth structural level (out of seven levels). Apart from the arrangement of stairs and terraces (landings) that link the various floors of the house, this house is not well integrated. Passage to the back storage rooms and the shrine requires passing through a living/sleeping area, and access to the other sleeping room requires passage through the guest quarters. The upper floor is used mostly for storage, although one sleeping space is found here as well. The house has 14 roofed rooms and 193 square meters of roofed area. Its graph contains 18 nodes, 7 structural levels, and 12 accessibility ranks.

7. SWA165 (Large house of the sort found in the eastern highlands and plateau of Yemen; it "houses the main branch of the family." From Varanda 1982: 235) (Figure 2-20). This is a large, complex house included within the Southwest Asian "other" sample. An extended family lives here, but no details are given concerning what kind

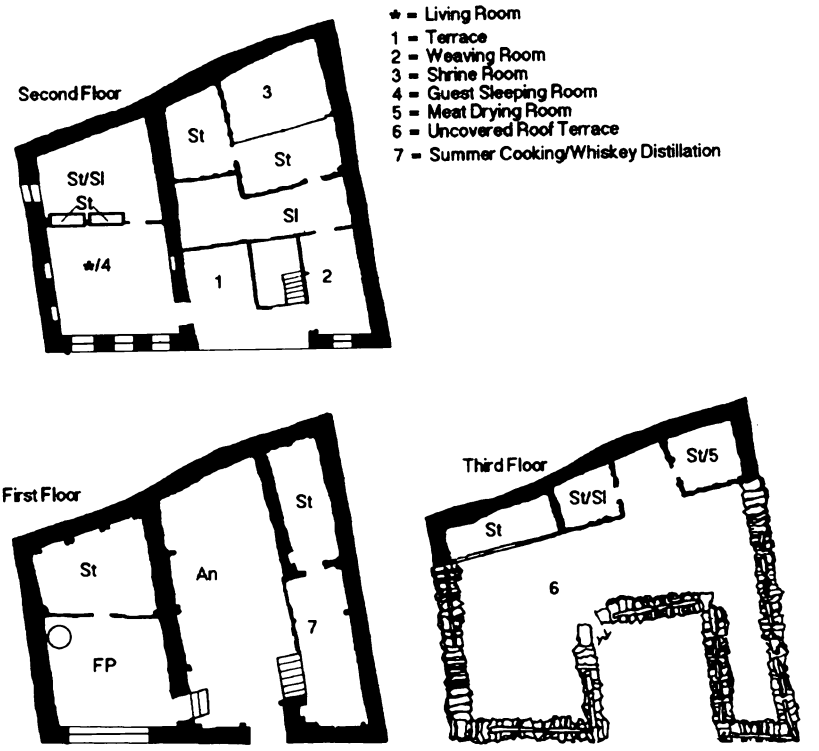


Figure 2-19. SA044, Marpha Village, Panchgaon region, Nepal. Modified from Blair (1983:50).

of household organization is represented or how large the household is. Sleeping rooms are partially segregated by gender and generation (mother's and grandmother's bedrooms are mentioned). Entertaining of male guests (by males) in a special room ("2" in the figure) is an important social activity of a household like this. The structure has 28 rooms, 273 square meters of roofed area, 12 hierarchical levels, and 19 accessibility ranks in the path matrix.

8. SA001–003 (House series from Thyagasamuthiram, Tamil Nadu, south India, SA01; the structure on the lower left is a house of a poorer infantry caste [SA003], on the upper left is a house of a wealthier infantry caste [SA002], and on the right a Brahmin house [SA001]. From Sivertsen 1963: 48–52) (Figure 2-21). These houses

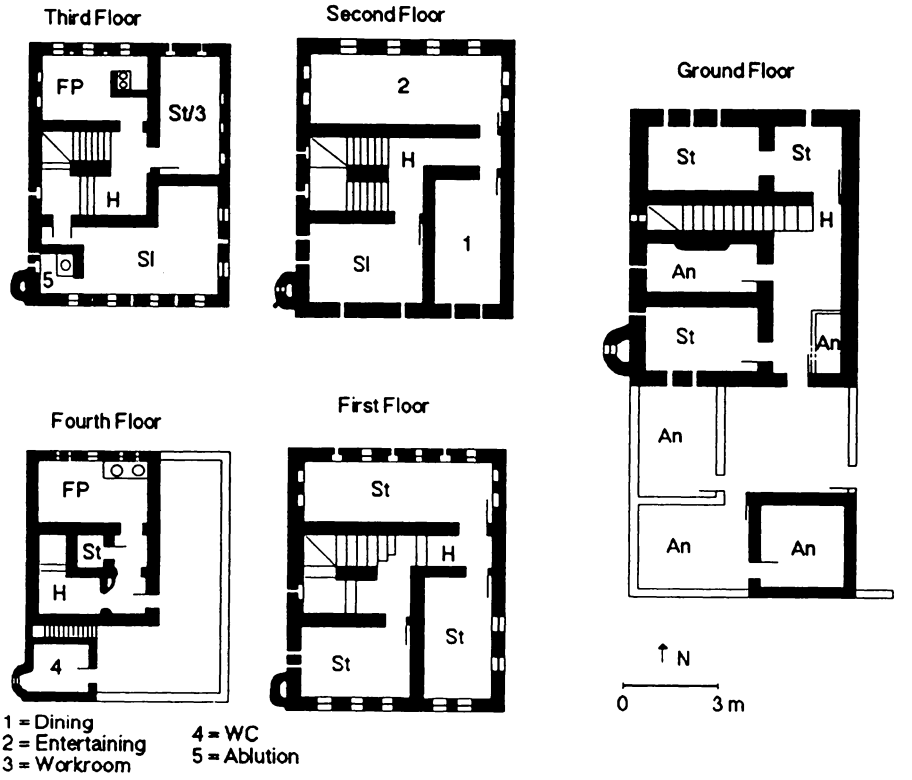


Figure 2-20. SWA165, Yemen. Modified from Varanda (1982: 235) (H = hallway).

illustrate something of the variety to be found in a south Indian village, although within the South Asian data set many houses are even simpler than the simplest of this group. The Brahmin house has more specialized rooms than the others, but lacks a hierarchically arranged set of sleeping spaces; the space adjacent to the covered passageway that is also used for storage is evidently the main sleeping area for the entire household, which consists of a nuclear family.

9. SEA001 (The house of a "rich peasant" household in Chiangmai village, northern Thailand [SEA05]. From S. Potter 1977: Figures 4 and 5) (Figure 2-22). A complex household resides in this compound, with the senior couple and their unmarried offspring residing in the main house, whereas married children (daughters and their husbands) reside in the subsidiary structures. There is a sense of hierarchical relations among generations in the house, and this is

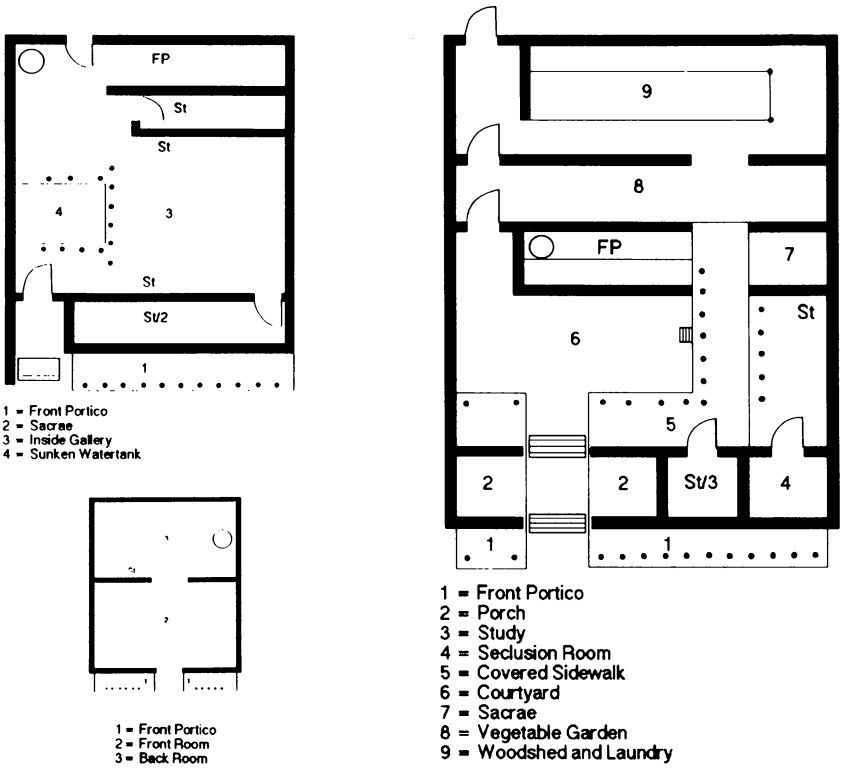


Figure 2-21. SA001–003. Thyagasamuthiram, Tamil Nadu, India (SA01). Modified from Sivertsen (1963: 48–52). Right, Brahmin house; upper left, wealthier infantry caste house; lower left, poorer infantry caste house. Sizes are roughly to scale. No dimensions are indicated in the text, but the total surface areas of the three structures are Brahmin, 316 square meters; wealthier infantry caste, 170 square meters; poorer infantry caste, 35 square meters.

reflected in a hierarchical use of space even though the positioning of houses within the compound shows no formal plan; for example, the elder's bedroom is in a part of the main house thought to be best connected to matriline spirits, a room containing the household's ancestral shrine. The compound contains 13 roofed rooms (in two houses currently occupied by the household), 29 nodes, 8 circuits, 10 hierarchical levels, and 15 access ranks in the path matrix.

10. CH019 (Yeh A compound, Yen-liao, south Taiwan [CH05]; from Cohen 1976: Figure 4). This is the house of a large complex household (made up of seven nuclear families). The structure is built according to the "Han" style that I describe in more detail below. It is

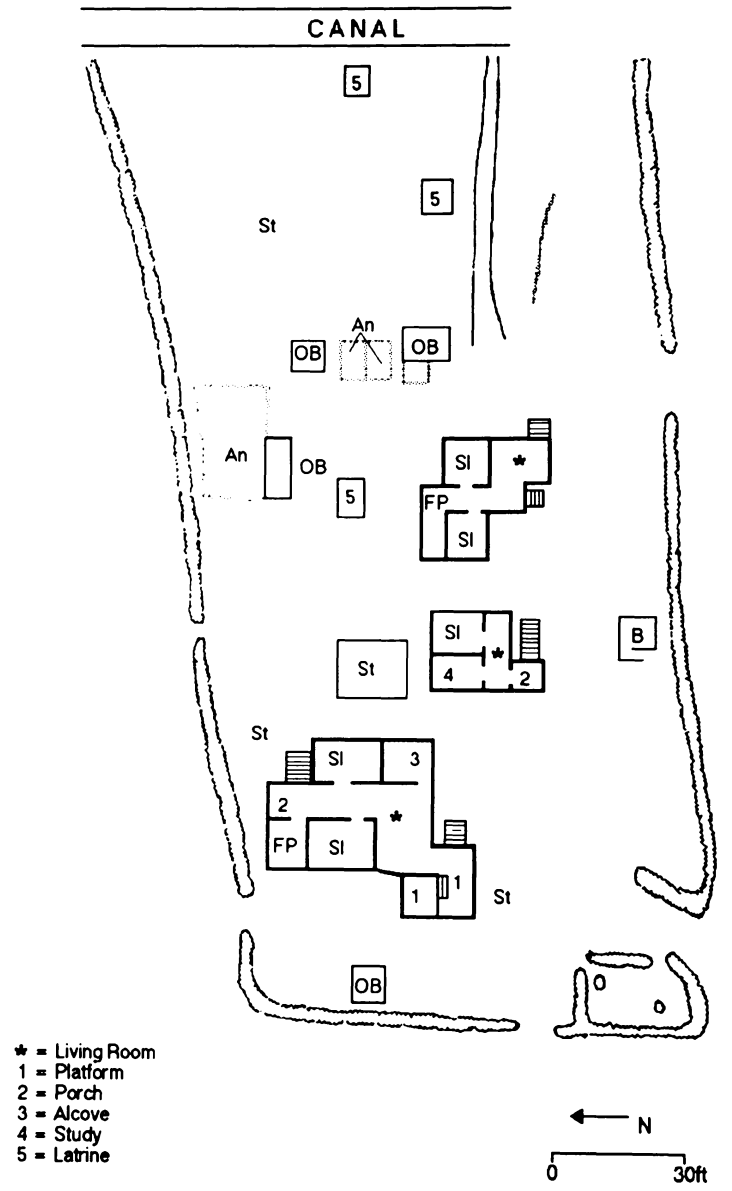


Figure 2-22. SEA001, Chiangmai Village, northern Thailand (SEA01). Modified from S. Potter (1977: Figure 4) (OB = outbuilding, B = bathing enclosure).

characterized by an extremely hierarchical and formal arrangement of spaces, centering on an ancestral hall that faces a central courtyard. Wings of sleeping/living spaces flank the courtyard and subsidiary wings of similar rooms are found behind these. This is the largest structure in my house sample, containing 91 nodes, 6 hierarchical levels, 37 access ranks from the path matrix, 9 circuits, and 20 transitional spaces (and 79 windows!) (Figure 2-23).

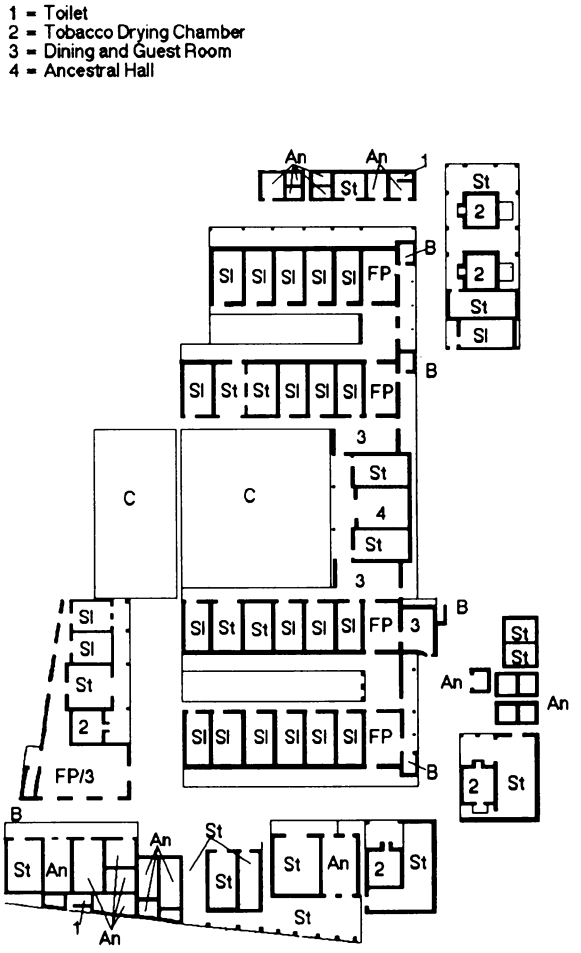


Figure 2-23. CH019, Yeh A compound 1, Yen-liao, south Taiwan (CH05). Modified from Cohen (1976: Figure 4) (B = wash room). Scale uncertain, but I estimate 560 square meters of roofed area.

Chapter 3

Household Social Reproduction and the Canonical Communication of Habitus

In the first chapter I discussed several analytical studies that showed how house form communicates cosmological principles, what I refer to as canonical communication. Within my community and house data there is a surprising deficiency of detailed information relating to this aspect of house form and use; none of my sources contains as rich a description of domestic symbolism as is found in, for example, Blier (1987), Bourdieu (1973), Cunningham (1973), or Gossen (1972), in which houses are shown to constitute a link between broad cosmological principles on the one hand, and gender, generational, and rank differences on the other. But the comparative lack of information in the coded sources cannot be taken to mean that canonical communication was of no importance in at least some of my coded cases. Although the data are poor, they are sufficient to demonstrate a considerable degree of variation in the richness and quantity of canonical communication in the houses in my sample, what Waterson (1990: xvi) refers to as "symbolic load."

In the examples referred to above, several media are frequently employed for the expression of cosmological principles through domestic architecture. Although not a complete list of all possible media,

the following categories are found in houses in my sample: (1) the presence of an *axis mundi* (liminal space) that serves as the conduit from the house and its inhabitants to supernatural forces; (2) a hierarchical structuring of space use that sanctifies certain persons and/or activities through a linkage to the liminal space(s); (3) other patterns of differential space use or spatial concepts that link zones of the house to gender and/or generation, based on concepts like left–right symbolism and ideas of purity and danger; (4) the use of geomantic concepts in house placement, layout, and orientation that attempt to maximize access to beneficient forces in the environment; and (5) the presence of household shrines or similar features that symbolically express ideas of household solidarity and continuity. The shrines in question physically manifest the connection between members of the household and their specific ancestors; this is like an *axis mundi,* except it is specifically a household shrine.

There are many other kinds of symbolic features in specific housing traditions (e.g., symbolism attached to structural members of the house, or symbolically potent doorways or other thresholds), but the five I included in my coding were often identifiable in the descriptions of houses I encountered, although the whole list is not necessarily found in any one case. Often, a house description indicates the presence of a feature such as gender restriction of space use, without any discussion of its cosmological basis. In the analysis, I consider the presence of these attributes as evidence of canonical communication through the medium of the house, even when the content of that communication (the meaning of the symbols) cannot be completely understood from the source. In the following, I first summarize the nature of symbolic content of houses by major world region, then I offer and evaluate a hypothesis that attempts to explain the observed variation within and between regions.

CHINA

Of the housing traditions in my sample, Chinese houses most consistently and vividly express cosmological principles. In layout, orientation, space use, and location, Chinese houses make use of many of the kinds of canonical communicative strategies utilized in other housing

traditions, but rarely are so many elements combined into one housing tradition as they are in China. The basic elements of this strategy include axial symmetry based on directional symbolism, number symbolism, cosmological considerations in orientation and location (geomancy), shrines as liminal spaces manifesting household solidarity, and a hierarchy of space use related to generational (and sometimes gender-based) distinctions in status. Many elements of this tradition can be traced to developments in Han dynasty architectural design (Knapp 1986: 13–14), and houses of this type are often referred to as reflecting the "Han style," although the basic plan consisting of a central entrance leading to a space flanked by sleeping spaces situated to the left and right can be traced to the Neolithic Yangshao Period at sites like Banpo (Pan-p'o) (Yuanzhao Zhong and Chen Yangzheng, eds., 1986: 16, passim).

A small Chinese house is a south-facing square or rectangle, consisting of modular room units or bays (*jian, gien, kaijian,* etc.), arranged laterally in configurations of one, three, or five rooms (Boyd 1962: 26–37; Knapp 1986: 26), with the ridge line of the roof oriented parallel to the facade in an east–west direction (Knapp 1986) (Figure 3-1). Odd numbers of rooms provided symmetry and were thought to bring good luck (Knapp 1989: 33–34). The central room serves as hallway, kitchen, and family shrine area (Wolf 1978: 133), with access to the side rooms through an entrance into the central room (Knapp 1986: 26, passim) (referred to as the "one-open, two-closed" form). Directional symbolism is expressed in the use of the bedroom to the right (normally the eastern room because the facade usually faces south or southeast [Knapp 1986: 30]) as the residence of the senior generation, whereas the bedroom to the left is reserved for other family members, including married sons. Houses were optimally located and oriented according to the geomantic dictates of the practice of *fengshui* (Freedman 1969; Knapp 1986: 108–114). Although most poor rural households were probably unable to engage the costly services of a professional geomancer, most households were aware of the importance of geomantic considerations in house location and orientation (Knapp 1986: 112).

Particularly in southern China and Taiwan, rural houses could be considerably enlarged while adhering to the same canonical principles

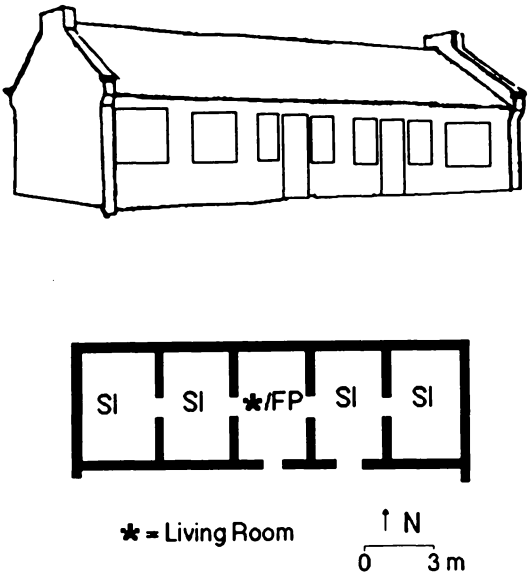


Figure 3-1. CH011, modified from Dunzhen (1980: Figure 58). The floor plan illustrates the axial symmetry of a five-bay house, with sleeping/living rooms flanking a central room that contains the kitchen and household shrine.

(Knapp 1986: 40–51, Chapter 4; Knapp 1989: 38, 47). This could be done through the addition of wings of subsidiary bedrooms attached to the ends of the side rooms, creating an open courtyard plan with the family shrine located in the central room of the core building, facing the courtyard. These additions would produce an "L"-shaped configuration with the addition of one wing, "U"-shaped with the addition of two wings (Figure 3-2); an additional wing sometimes enclosed the fourth side of the courtyard (Liu Dunzhen 1980). Further elaborations on this theme involved the symmetrical placement of subsidiary courtyards behind the central building or along the sides of the wings (Boyd 1962: 77; Fu Xinian 1984: 14; Knapp 1986: 43–44, 1989: 49–50) (Figure 2-23). Perhaps the most complex dwellings that elaborate on the structural themes of the Han style are the Hakka dwellings of the southwestern parts of Fujian and adjoining parts of Guangdong province (Boyd 1962: 103; Knapp 1986: 45–49; Liu Dunzhen 1980: Figures 105, 106, 114–119). These are, in some cases, multistoried structures containing hundreds of rooms, surrounding an elaborate ancestral hall situated on a central axis linked to the formal

Figure 3-2. CH019, Yen liao (CH05), "U"-shaped courtyard formed by the central shrine room (facing), and two wings of living/sleeping rooms. From Cohen (1976: 107). Reproduced with permission of Myron L. Cohen and Columbia University Press.

entrance. Unfortunately none of the Hakka structures reported on in the literature available to me are described in sufficient detail to warrant inclusion in my coded data, but other large courtyard houses (Yunnan Province and Taiwan) were included (CH002, 003, 004, 019) (Figure 3-3).

Many of the Chinese houses I coded conform to the Han principles. Based on a perusal of the houses coded from Liu Dunzhen (1980), it is apparent that relatively few houses fail to employ the strict axial symmetry, odd numbers of rooms, and southward orientation (with its east–west roofline) implied by the ideal cognitive model, but several included in the coded sample are deviant, including CH005 (Figure 2-16), CH007, 012, 013, and 016–018. The latter three houses are cave dwellings from Henan Province in the vicinity of the Yellow River in central China. It is difficult to determine, without more detailed information, whether the deviations from Han style in the cave dwellings is due to a conscious departure from the ideal model or is a result of the difficulties of applying the model to houses built underground.

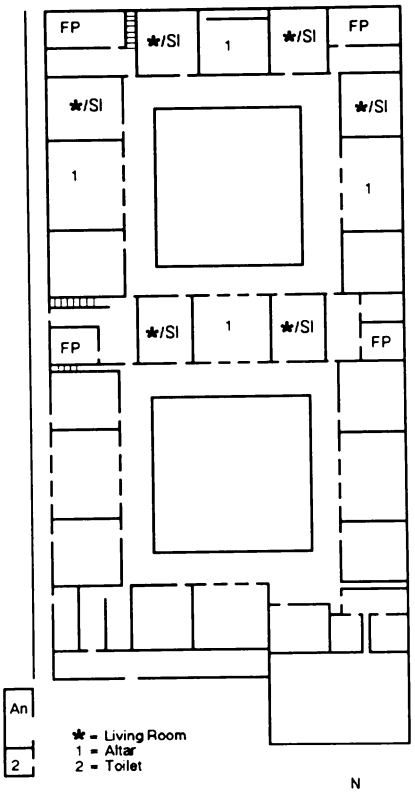


Figure 3-3. CH004, modified from Hsu (1949: 35) (ground floor of "Y" house). This house illustrates how the modular units, composed of shrine room plus flanking living/sleeping rooms, can be combined to form a complex of two enclosed courtyards.

Although the data are far from sufficient to draw any firm conclusions, there exists a slight tendency for strict interpretations of the Chinese cognitive model to be found more frequently in southern China as compared with the north and central areas, although many rural houses in the latter areas faithfully reproduce the Han pattern. Of the houses in my community sample, those from West Town (CH01), in southern China, probably most closely conform to the Han ideals. Hsu's "Y" house (CH004) (Figure 3-3) is a large structure (with an estimated 56 rooms), consisting of symmetrically placed three- and five-bay structures forming two identical courtyards linked by what was the main family shrine in the central wing of rooms (the house-

hold was smaller at the time it was described and was not making use of all rooms). Even the house of a poor West Town family (CH001) demonstrates the precise axial symmetry of a "one-open, two-closed" three-bay arrangement (i.e., with an open central bay leading to flanking subsidiary rooms to the right and left), with ridge-line parallel to the entrance (Figure 3-4).

In this house, the central bay is subdivided to form a front living and working area separate from a shrine area. The only deviation from the typical Han form is the fact that the kitchen is located in the room to the left rather than in the central bay. It is of note that even this thatch-roofed house of a poor family has the classic curvilinear roof

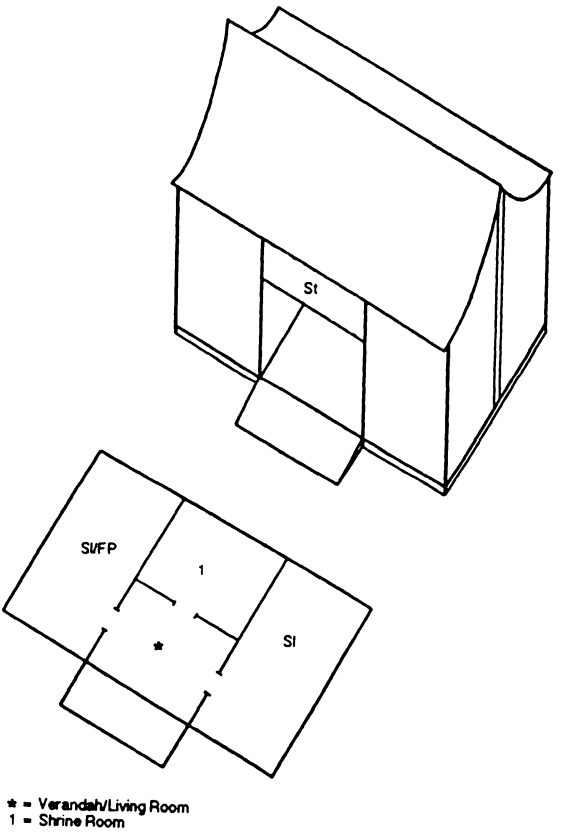


Figure 3-4. CH001, modified from Hsu (1949: 42).

profile diagnostic of Chinese houses and public buildings alike. Osgood's descriptions of houses in Kao Yao (CH03), also in southern China, are not highly detailed, but combining his descriptions (including his Figures 6 and 10) with a perusal of photographic plates he included in the ethnographic report, I concluded there was a strong tendency to employ the Han style in house construction (excepting the partially deviant "lower-class" houses in his Figure 6 lacking the typical axial symmetry). There was, according to Osgood (1963: 327), surprisingly little interest in the application of *fengshui* in the location and orientation of houses, but in appearance the houses in Kao Yao are very Chinese.

Several additional examples of houses in southern parts of China, not included in my coded data, illustrate the strict application of Han principles. I previously mentioned the famous Hakka structures with their extreme axial symmetry and elaborate ancestral shrines. Kulp (1925: Figure 5) illustrates a large house in Guangdong province that appears highly formalized along Han lines. Several houses from Zhejiang province also appear highly Hanlike, including one illustrated by Liu Dunzhen (1980: Figure 76) and those illustrated by Knapp (1989). It is of corollary interest to this discussion to note the fact that the traditional Chinese column-beam-and-strut system of roof framing that permits an elaboration of curvilinear roof profiles (Boyd 1962: 26–37; Fu Xinian 1984; Knapp 1986: 69–76) is also most elaborately manifested (at least in terms of rural dwellings) in the more southern regions of China (Knapp 1989: 99, passim), as are the various gable decorative elements that are typical of Chinese style (Knapp 1986: Chapter 4). Taiwanese traditional houses also illustrate a strict adherence to Han principles (Knapp 1986: Chapter 4), as is illustrated by one example included in the coded data (05019) from Yen-liao (Cohen 1976: Figure 4; cf. Gallin 1966: Figures 1 and 2).

I previously concluded (tentatively, given the paucity of data), based on the houses illustrated by Liu Dunzhen (1980), that as one moves north toward the more central and northern regions of China, rural houses tend to be smaller than those found in the south, and less often illustrate the "classic" features of Chinese house form in layout and decoration. The houses described by Fei (1939: 122; CH02) from Kaihsienkung, in the rice region near the mouth of the Yangtze

River, represent an interesting departure from Han principles (Figure 3-5). Although the typical house he illustrates contains the usual shrine room (as a front room), the remaining rooms of the house are situated behind this room, surrounding a small interior courtyard set off to one side and thus violating the crucial axial symmetry. A back door leads to a rear courtyard devoted to agricultural activities. This particular form may have developed as a response to the compact spacing of houses in the village, all of which face onto public roads fronting a waterway; the decision to adopt this village settlement pattern may have precluded the usual lateral placement of rooms surrounding a central bay. And the placement of houses

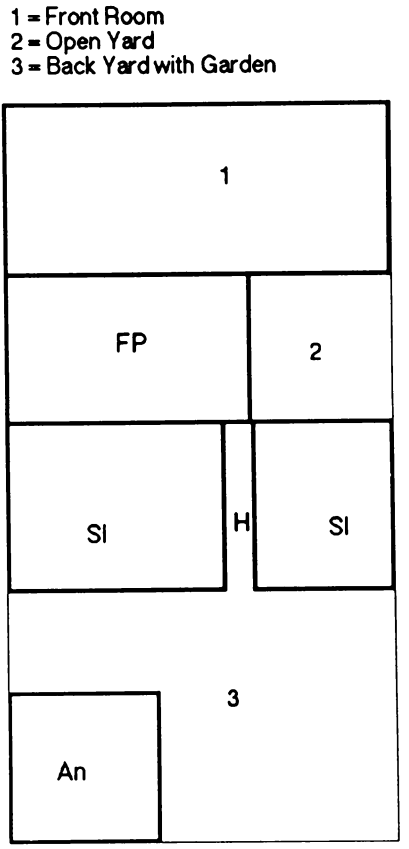


Figure 3-5. Typical house of Kaihsienkung, China (CH02), modified from Fei (1939: 122).

facing waterways precludes a south-facing orientation for many houses (e.g., his Map III).

The houses illustrated by Yang (1945: Figures 1–9; CH04), from Taitou in the wheat region of Shandong, also illustrate only a partial application of Han layout and construction. The core set of bays in the houses he illustrates do face south, with the bedrooms positioned to either side of a central room that functions as a kitchen, reception, and dining room, and that contains a family shrine. The roof framing and roof line are oriented east–west (although they illustrate a simple framing arrangement lacking the curvilinear roof form). But in the example shown of main-house floor plan (his Figure 7), there is an even number of rooms, due to the addition of an extra bedroom for unmarried daughters at the end of the parents' bedroom. Subsidiary rooms for junior family members or agricultural laborers are placed as separate structures opposite the main building, rather than in the more usual form of "wings" of bedrooms creating a courtyard in the Han style. Rooms along the sides of the courtyards are devoted to agricultural purposes and are not necessarily attached to the ends of the central building. I return to evaluate the significance of the issue of north–south variation in Chinese houses below.

JAVA

The Javanese rural houses described by Jay (1969; IP01) are of standard design and easy to construct, allowing families to readily alter them in response to changes in family prosperity (Jay 1969: 48). House interiors are "diversely arranged according to the convenience of the family" (p. 49). Although the rice store is considered to have a "spiritual essence" (p. 50), there are no physical manifestations of ancestor worship or other liminal spaces. The orientation and location of houses is influenced by a grid of roads found in each community, oriented north–south, that reflects the value placed on a "geometrical unity of the landscape" (p. 7), but this does not seem to have any relation to geomantic concepts applied at the level of households. Tjahjono (1989) describes the potent symbolism of house form as it is found in south–central Java (cf. Rassers 1982: 219–297), but the patterns he noted are only weakly represented, if at

all, in the houses described by Jay. All in all, these houses contrast strikingly with the Chinese houses in displaying little evidence of canonical communication.

JAPAN

Japanese rural houses (*minka*) and the rituals that take place in them indicate a great intensity of canonical communication (e.g., Jeremy and Robinson 1989). Traditional rural houses and houselots are located, laid out, and oriented according to a system of directional rules (*hōgaku*) (Beardsley, Hall, and Ward 1959: 79, 80, Figure 14; Critchlow 1977). Several kinds of liminal spaces are likely to be found, including Shinto shrines, usually near the entrance and in the kitchen, and a Buddhist shrine (*butsudan*), located in the back room where the senior couple sleeps, that is an ancestral shrine. There is a sense of generationally based hierarchy in the arrangement of sleeping spaces, and a weak tendency to identify women's activities with the north portion of the house, in contrast with guest entertaining in the south portion (Beardsley, Hall, and Ward 1959: 81).

THAILAND

There is no general summary source on traditional housing in Thailand that would allow me to comment in general on patterns of canonical communication, but from a variety of sources I consulted, there appears to be a south-to-north continuum in house complexity in this regard. To the south, in the central rice-growing plain, rural houses were evidently comparatively small (probably housing nuclear families) and of simple construction (deYoung 1955: 30; Sharp et al. 1953: 125–126); unfortunately the sources are mute as to the expression of cosmological themes. By contrast, the larger and more complex houses of northern Thailand, like other vernacular housing traditions of upland southeast Asia, have received much attention by both anthropologists and architects (e.g., Krug and Duboft 1982; the chapters by Clement, Thomsen, Haagensen, and Pedersen in Izikowitz and Sørensen, eds., 1982; Tambiah 1969; several chapters in Walker, ed., 1975; Waterson 1990: 179–183). These sources describe houses that

very likely involve canonical communication, including the presence of liminal spaces, hierarchical space use based on generation and gender distinctions in status, and orientational preferences. The houses described in Sulamith Potter (1977) (Figure 2-22) and Jack Potter (1976) (SEA01) show (1) house layout influenced by cosmological forces (the north corner is regarded as important for matriline spirits); (2) ancestral shrines (SEA001); (3) other liminal spaces (Buddha shrines); and (4) a generationally based hierarchy of sleeping areas. There is no evidence of gender-based restrictions on space use that I could detect in these houses, but this is present in some areas of northern Thailand (e.g., Walker 1975 and Jaafar and Walker 1975).

VIETNAM

The Vietnamese houses beautifully illustrated by Hickey (1964: Figures 3, 5, 8, 10, 13; CH02) show a definite affinity to Chinese houses in appearance and layout. In all but the smallest thatched structures, the main part of the house demonstrates a strong sense of balanced axiality, with the central axis defining the position of the central ancestral shrine, flanked by the main sleeping rooms (Figure 3-6). The roof pole lies parallel to the facade, and in some of the more elaborate houses, gable decorations and upturned ridge lines impart a definite Chinese essence to the structure. In the floor plan, the main departures from a Hanlike pattern are to be found in locating the kitchen in a partially separated room left or right of the main chamber, and subsidiary sleeping spaces, even in the larger houses, are created by altering the layout of the main chamber, rather than through the addition of subsidiary sleeping rooms or wings of rooms attached to the central room, as would be the case according to the Han style. As in China, the Vietnamese house is more than just a place to live. It manifests household solidarity and continuance in its ancestral shrine, and it is important that the location and orientation of the house maximize favorable cosmological forces that will encourage dead ancestors to bring prosperity to the household (Hickey 1964: 38–41). When possible, households employ the services of a professional geomancer.

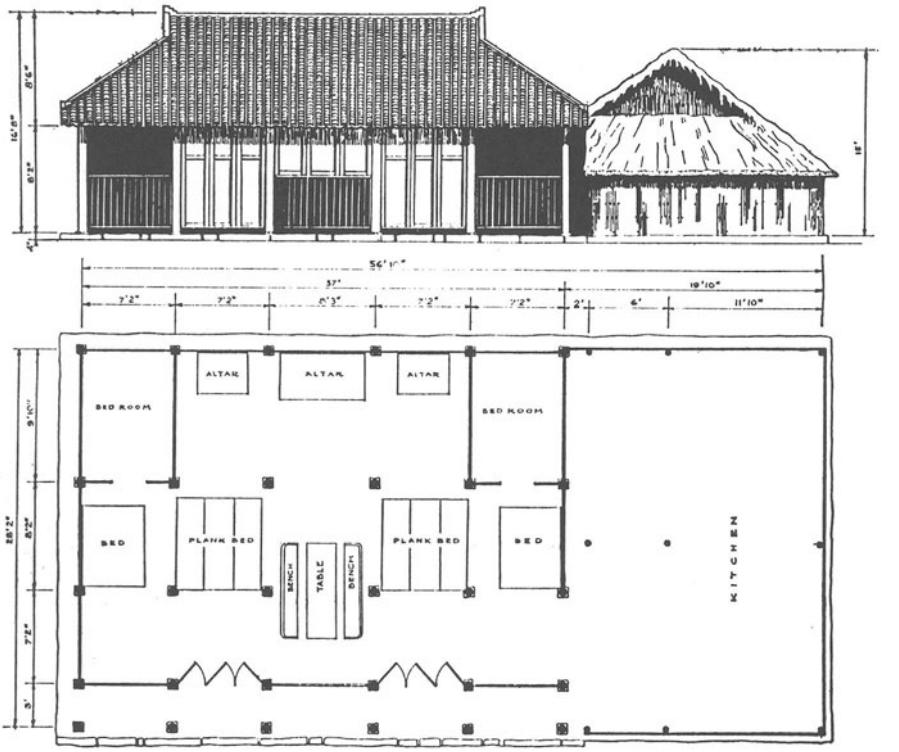


Figure 3-6. SEA006, Khan-Hau village, South Vietnam (SEA02). Reproduced from Hickey (1964: Figure 10) with permission of Yale University Press. Copyright Yale University Press.

SOUTH ASIA

South Asian traditional rural houses represent a far more varied and complex picture than the areas reviewed so far because there are so many different local traditional styles and systems of canonical communication. My goal is not to describe each of these separately but rather to point out the main patterns across this vast area. From the point of view of canonical communication, the most useful division is one that treats separately Hindu India (and Sri Lanka, which has similar features) on the one hand, and the far northern areas, particularly Nepal, on the other. For now I ignore the houses of South Asian

Muslims, reserving the discussion of the Islamic tradition until the next section on Southwest Asia.

The whole focus of canonical communication in the traditional rural houses of Hindu India is strikingly unlike those traditions discussed so far. The main thrust of symbolic communication in Hindu houses relates to the management of purity and defilement. At the level of domestic architecture, defilement is avoided through the creation of a hierarchy of spaces within the house, ranging from impure spaces directly accessible from the outside (front areas, identified with men, visitors, bathing, and elimination), to the purer, more isolated inner rooms which are the domains of women, food preparation, eating, and prayer. According to Khare (1976: 26): "a food area is always physically located in an interior (and a ritually pure) part of the house. It is accorded a definite priority in the planning of the domestic spaces and its place and orientation is guided by certain cultural rules." Because women's movements and activities in the house are comparatively circumscribed and because they are viewed as having more potential for pollution, this system of canonical communication can be viewed as one emphasizing gender differences in rank within the household organization. A similar sense of the sanctity of the kitchen and gender-based distinctions in space use can be seen in Sri Lanka (Yalman 1967: 105; MacDougall and MacDougall 1977 [SA010]).

Spatial arrangements permitting the appropriate separation of the pure and impure, and the control of women, tend to be found in the larger houses of the higher-ranking castes. The Brahmin house described by Sivertsen (1963: 49 [SA001]) (Figure 2-21, right) illustrates the major features of this kind of floor plan. The main rooms of the house surround an interior court providing privacy, especially for women. There is a linear succession of spaces from the front portico (*verandah*) and porches through the courtyard, then to the kitchen. Behind the kitchen there are additional courtyard spaces for a garden, storage, and laundry. Across from the kitchen there is a room identified as the repository of the family *sacrae,* but this is not identified as an ancestral shrine per se. The main liminal space appears to be in the vicinity of a Tulasi bush in the central court. A seclusion room houses women during menstruation. Sivertsen (1963: 47, 49)

points out that the house was carefully constructed according to the dictates of the Vedic Shastras, which specify the axial arrangement of rooms and determine such features as the position and relative heights of doors, floors, and so forth. The house representative of the "infantry" caste (Sivertsen 1963: 50, 52 [SA002, SA003]) (Figure 2-21) is much simpler but illustrates some of the same features, notably the physical separation of the kitchen by placing it in a rear space. The infantry caste in this village is a "sudra" caste, implying a middle position in a status hierarchy that ranks Brahmins higher and "pariah" castes lower. So far as I can tell from Sivertsen's text, pariah houses are similar to the houses of the poorer infantry caste households.

Among the houses illustrated in the 1961 Census of India Report on House Types and Settlement Patterns, a minority (17%) show the kind of axial symmetry and the separation of front and back regions similar to Sivertsen's Brahmin house. An additional 34% of the houses in this sample I placed in an intermediate category in which the houses are simpler but still distance the kitchen from front spaces and place it behind a wall (in a sample of 52 houses from two villages in Karnataka state, 45% illustrated this pattern [Chandru 1989]). But the most frequently occurring type I identified (making up 49% of the plans illustrated in the census) probably could not appropriately separate back and front regions, usually because the house consists of one room only or because the kitchen is located in an accessible position off of a courtyard or is easily accessed from the main room (Figure 3-7).

In the same sample of houses from Karnataka, all kitchens were to some degree physically separated from other rooms, but in 55% of the cases, this was realized only by the construction of a partial wall, often not extending to the ceiling.

Within the Hindu house, there is a comparative absence of the symbolism of household solidarity and hierarchical structure based on generational differences, indicated in part by the rarity of household or ancestral shrines. In the 1961 census series, only two floor plans specifically mention a "household deity" or "household god" (the latter is SA011). Although there are few data, it appears to be the case that such shrines are rare and occur primarily in elite houses such as SA011 and the house described by Dube (1955: 29). Although there

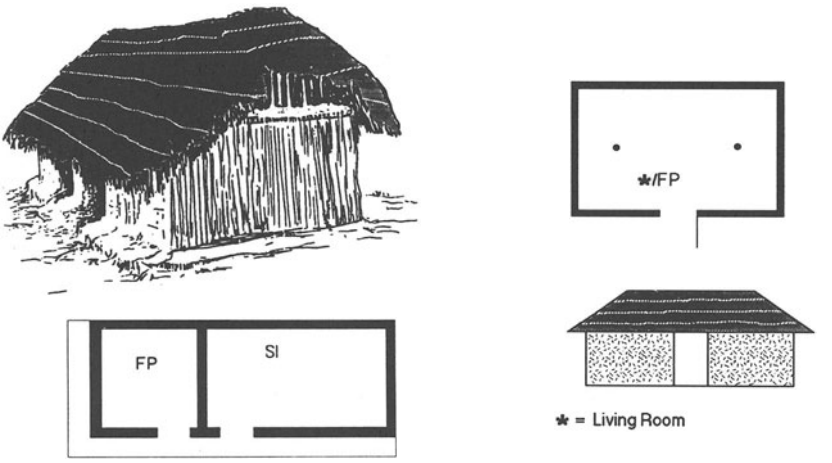


Figure 3-7. Small houses in India in which food preparation areas are not physically separated from the front regions of the structures. Left, SA028, modified from the 1961 Census of India, Volume 1, Part IV-A(iii), following page 163. Right, SA022, modified from the same source, following page 156.

are often special areas, or even separate rooms, for prayer (*pooja*), these are not identified specifically as liminal spaces related to ancestral worship. The layout of Indian houses does not appear to regularly provide for generationally graded sleeping arrangements of the sort that are a main theme of the Chinese, Japanese, and Northern Thai houses described previously. In Hindu India, when a household adds rooms to their house, they typically will add various kinds of spaces, including verandah, a separate room for bathing, animal rooms, and agricultural storage rooms (Lewis 1958: 21–22; Rege et al. n.d.: 10), rather than adding subsidiary sleeping spaces or apartments for married children. I conclude that the traditional houses of Hindu India stand in contrast with the housing traditions described previously. In contrast with Chinese canonical communication, for example, which emphasizes intrahousehold hierarchy, solidarity, and multigenerational continuity, Hindu houses are much more directed toward an interhousehold communication of social status, in a situation in which, as expressed by Dumont (1980: 56), the "distinction of purity is the foundation of status."

It is necessary to look to far northern South Asia to find abundant

evidence for those features of intrahousehold canonical communication generally lacking in Hindu India. In Nepal, a number of the structures I included in the coded sample have evidence of ancestor worship (in the form of "family altars" or "house shrines," etc.), including Tharu (SA004), Sherpa (SA008), Kaligandaki (SA039), Ladakh (SA041), Tharu (SA042), Panchgaon (SA044), Newar (SA045), and Gurung (SA047) (cf. Dargyay 1989). Generationally based status differences, indicated by hierarchically arranged sleeping spaces, are mentioned in the coded series for Tamang (SA007), Kaligandaki (SA039), Thakali (SA040), Tharu (SA042), and Gurung (SA043). Houses in the upland tribal zones of India may display these same features, for example, the Garo houses of Assam (Burling 1963).

SOUTHWEST ASIA

I include in the discussion of Southwest Asian houses those from other regions exhibiting Islamic practices, including Mohla village in the Punjab, Pakistan (SA02) and those I coded from the Nile Valley in Egypt, including Egyptian Nubia. Although this broad area contains many localized domestic architectural traditions, as I previously pointed out, certain unifying themes can be perceived over the whole of the area. As in Hindu India, the major thrust of the Islamic tradition in house form pertains to the position of women within the domestic orbit (Campo 1991: 98–103). Appropriate conduct in this regard is related to the determination of household social status (Campo 1991: 15). According to Petherbridge (1978: 196): "The Arabic name *sakan* to denote the house is related to the word *sakina,* 'peaceful and holy,' and the word for women *harim* is in turn related to *haram,* 'sacred area,' which denotes the family living quarters" (cf. Mazumdar and Mazumdar 1984; El Safty 1981). The desire to isolate women from males outside the house and male guests is manifested architecturally by the ubiquity of walled courtyards, or similar enclosed spaces that provide domestic privacy. These features permit a strict separation of semipublic spaces within the residential compound, which are the domains of men and guests, from the more secluded inner spaces where women retreat from male guests.

Because the physical separation of activities by gender is predi-

cated strongly on a sense of etiquette that applies when entertaining male guests, rather than on a sense of purity and defilement related principally to food preparation and eating, as in Hindu India, in rural Islamic houses the kitchen is better integrated into the traffic flows of the house than is true in India. It is of interest to make the comparative point that the three major Asian peasant housing traditions show a continuum of kitchen positioning within the house that reflects three distinct strategies of house as habitus. In China, the one-, three-, and five-bay formations typically place the kitchen in a central room that also serves as a transitional space, central living area, and shrine room; thus the kitchen is well integrated into the main traffic flows of the house and is thus a comparatively accessible point in the graph (in larger houses the kitchen is positioned less centrally because the central space may be transformed into a specialized shrine room). In Islamic houses the kitchen is variably positioned, but in the commonly occurring rural courtyard compounds of the main series especially, cooking is done in the courtyard itself and/or in a kitchen that is usually accessible directly off the main court (this is common, for example, in the large series of houses coded from SWA02, SWA03, SWA04, SWA05, and SWA06) (Figures 2-14 and 3-8). In Hindu India, the kitchen is often the most inaccessible room. These structural differences of the habitus can be visualized by scattergrams that cross-plot the number of hierarchical levels in each house by hierarchical level of the kitchen (Figure 3-9). The greater scatter of points in the two Southwest Asian scatterplots indicates the greater degree of flexibility in the positioning of the kitchen in these houses by comparison with India (and, to a lesser degree, China).

In other aspects of house form as well, the houses of the Islamic regions, particularly those of the main series, show considerable leeway for variation in layout and space use that would tend to militate against assigning symbolic or hierarchical significance to particular spaces within the house (for example, the houses depicted in Figure 3-8 lack any axial symmetry or other formal design plan). No doubt I reached this conclusion, in part, due to the fact that most of the houses I included within my sample are rural dwellings. A similar study of the houses of an elite would probably show a more structured use of space (e.g., the houses of wealthy Swahili traders described by Allen 1975

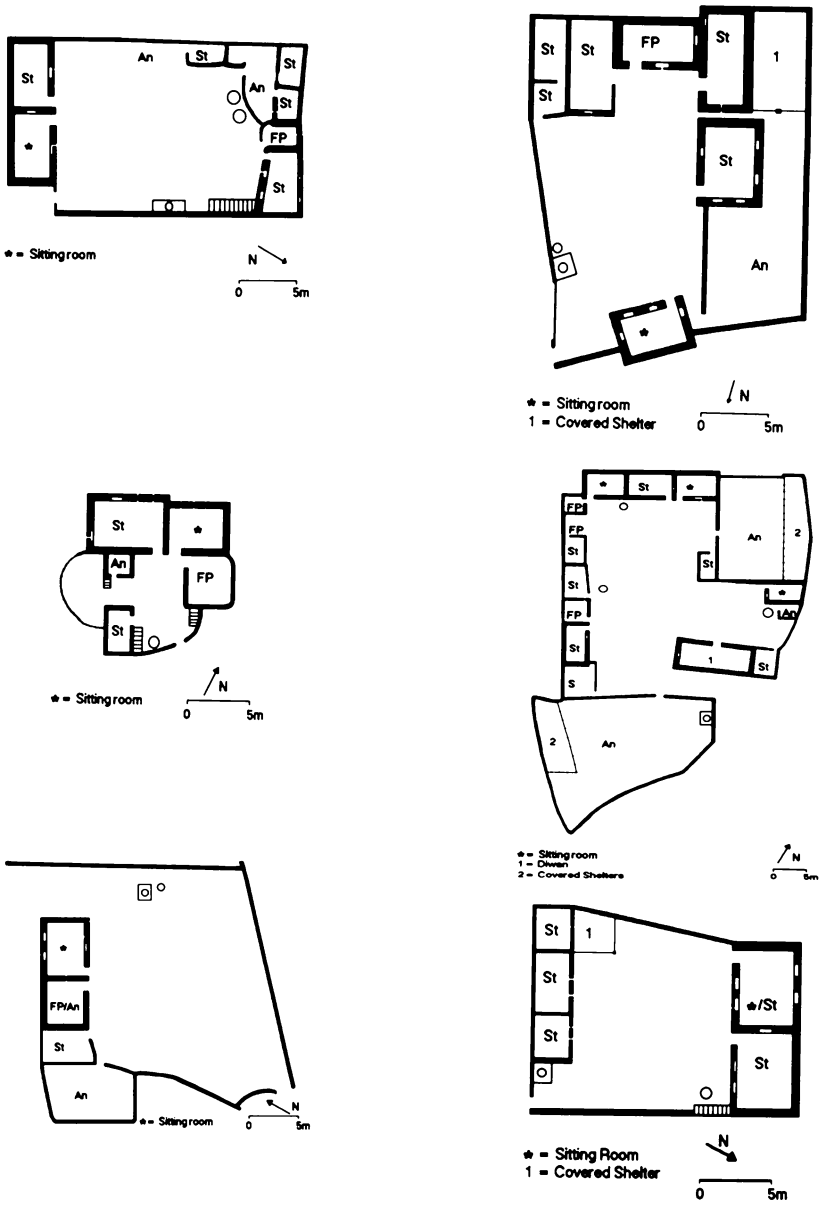


Figure 3-8. External courtyard houses from Darnaj, Syria (SWA06), showing the variable locations of kitchens and other cooking areas (circular features are ovens). Modified from Kamp (1982: Figures 10[SWA140], 11[SWA141], 12[SWA142], 14[SWA144], 15[SWA145], and 17[SWA147] (given top to bottom, then left to right).

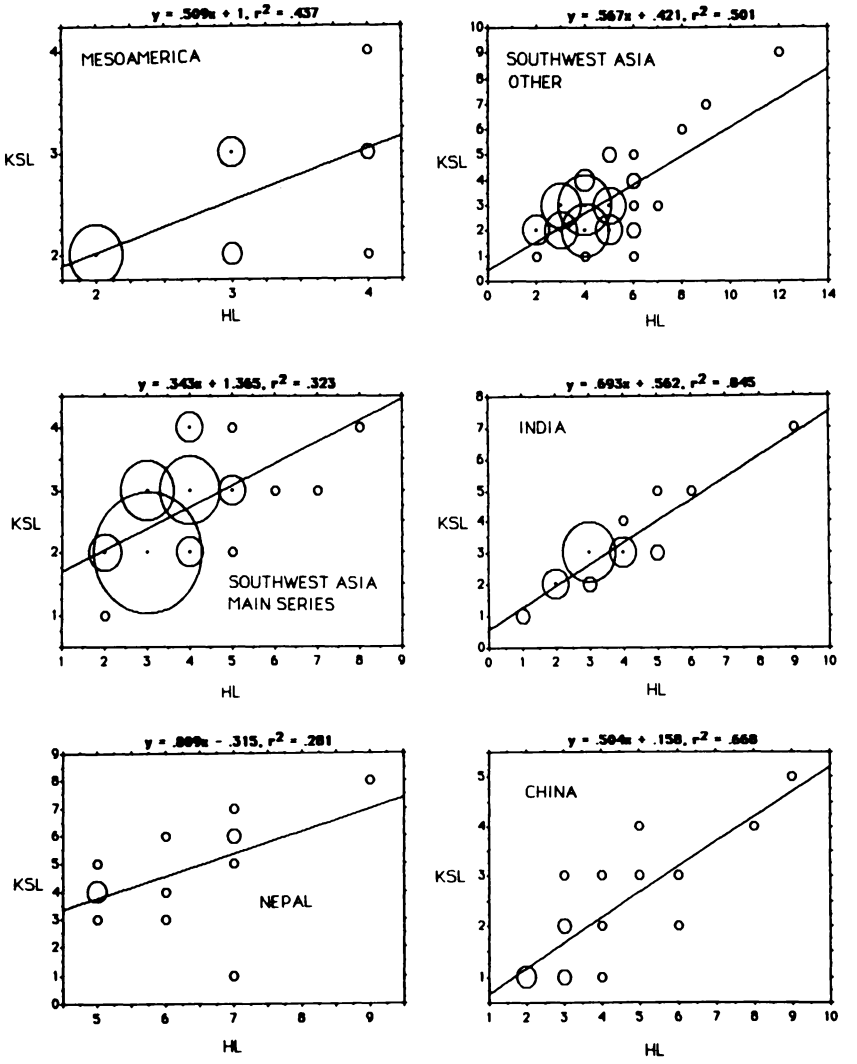


Figure 3-9. Scattergrams of total number of hierarchical levels in each house (HL, x-axis), by hierarchical depth of kitchen (KSL, y-axis), by region. Size of circle determined by number of points that coincide at that position.

and Donley 1982), but Petherbridge (1978: 199) makes note of the general tendency toward what he terms *polyvalent* (nonspecific) domestic space use in the Islamic world.

Among the Islamic houses included in my coded data, there is,

by comparison with most of the other traditions described to this point, relatively little evidence of canonical communication overall. According to Campo (1991: 94), "there exists no normative canon for special household rituals and geomantic procedures in Islam." This is most notable among the ubiquitous house compounds of the "main series," usually consisting of flat-roofed (or domed), mud-brick structures arrayed around a walled exterior courtyard. The houses I coded in communities of this zone are walled compounds affording the customary buffering of women from extradomestic interactions common to Islamic houses (although it should be noted that walled courtyards preceded Islam in this region). But otherwise, these dwelling compounds tend to display a spatial organization that is the outcome of what is, in most cases, a haphazard addition of rooms to an external courtyard. This ad hoc growth pattern seems to reflect primarily practical concerns, rather than reflecting any structured cognitive code that would result in a hierarchically arranged system of spaces (as is the case in Chinese and even Hindu houses). Within the compounds, there is rarely any indication of gender-based spatial segregation. Although in some localities there is a weakly expressed preference for an orientation allowing the entrance to face Mecca, the sources I used uniformly indicate that this requirement is rarely met in practice, or (in the cases I coded, where Mecca is to the south) is regarded as climatologically advantageous rather than as symbolically important (e.g., Horne 1988: 140–143; Kamp 1982: 142). Not one example of an ancestral shrine was found in any of the coded houses, in this zone or in other Islamic areas. Other physical manifestations of liminality, such as religious shrines or prayer rooms, are unimportant or nonexistent.

Some of the more localized architectural traditions included within the Islamic houses coded in my sample appear to make more use of the modalities of canonical communication, although none of my sources describes in detail the relationship between cosmological principles and house form. The Fedija houses of southern Nubia, for example (SWA149–152), unlike the agglutinating courtyard compounds, demonstrate a tendency to regularly arrange rooms along a central axis, defined by the formal entrance, separating the bridal hall (*diwani*) (for newly married sons) from the main cooking/living areas (Figure 3-10).

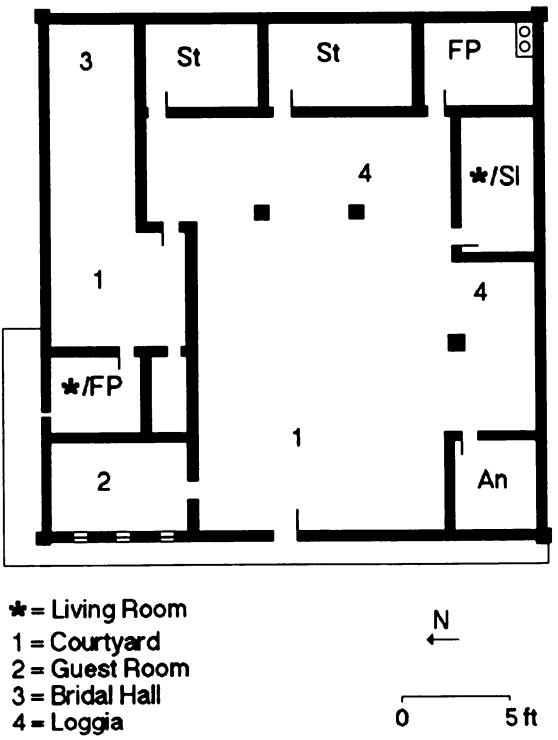


Figure 3-10. SWA150, southern Nubia, modified from Jaritz (1973: Figure 6).

Guest areas are restricted to rooms immediately adjacent to the formal entrance, affording a highly formalized separation of male guests and the women of the house, and hence a strict adherence to Islamic practice. Kenuzi houses in northern Nubia (SWA153–161) always position the living spaces along the north edge of the open courtyard, although Jaritz (1973: 49) attributes this to climatic factors. All Nubian houses are oriented carefully with respect to the Nile river, reflecting the symbolic importance of the river and its influential deities (El Guindi 1966).

In Jordan and Lebanon, living rooms are often placed symmetrically to the sides of a central hall, gallery, or *Liwan* (El-Khoury 1975; Fuchs and Meyer-Brodnitz 1989; Khammash 1986; Ragette 1980). According to Ragette (1980: 45), this duality reflects the symbolic oppositions guest–host/male–female. Other examples of the use of a

central corridor to separate male and female areas is seen in village Bedouin dwellings (Layne 1987; SWA197). Sweet (1960: 119; SWA08) briefly mentions the presence of left–right symbolism in the use of space in houses in Tell Ṭoqaan, Syria. The multistoried houses of Yemen are only briefly described by Varanda (1982), but there are features in some of the larger houses perhaps indicating a canonical communicative content of houses, in the form of specialized liminal spaces (SWA163, 165) and sleeping spaces segregated by generation and/or sex (SWA164, 165, 166). Bromberger (1986: Figure 16) describes the symbolic significance of zones of the house of Gilân, Iran, in terms of the symbolic oppositions pure/impure, young/old, winter/summer, public/private. I conclude that my houses of the Southwest Asian "other" sample contain, in general, more evidence of canonical communication than is found in the main series houses.

MESOAMERICA

Apart from the commonly occurring Catholic altars, the symbolic content of Mesoamerican rural traditional houses is minimal, although there are regions that diverge from the general pattern. El Guindi and Selby (1976) discuss the importance of the symbolic domains expressed as oppositions like inner house/courtyard/outside, in Zapotec rural houses, but do not link these to rank differences based on gender or generation. Of the Mesoamerican houses, Maya houses seem to show a greater degree of symbolic content than houses of the southern and central highland regions. Wauchope (1938: 142) found that in modern Maya houses, the altar, consisting of a small table supporting the picture of a saint, is often opposite the main door of the house, but it may be positioned also right or left of the door; directionality did not carry any symbolic significance that he could detect. Kitchen spaces within one-room houses are located in one end of the house, opposite the main living areas, but he found no symbolic significance attributed to this division either. Interestingly, Wauchope mentions (1938) that early Colonial sources describe rooms dedicated to the worship of "household gods," but no such features are present in the contemporary dwellings he describes. Altars used for ancestor worship are found, however, in contemporary houses in the western Maya

highlands of Chiapas and Guatemala (Deal 1987), and Gossen (1972) describes the intricate spatial symbolism of the Chamula houses of central Chiapas that reflect symbolic oppositions related to rank differences based on gender and generation.

The only houses in my coded Mesoamerican data that illustrate a complex pattern of symbolic expression are Tzotzil Maya houses from the municipality of Zinacantan in central Chiapas (Vogt 1969; MS001). These houses illustrate, in addition to the usual Catholic altars, an orientational preference, gender-specific use of space, a cosmological basis in layout and space use, and physical evidence of lineage ideology in the form of crosses placed near the entrance to each house that symbolize the solidarity and continuity of the patriarchal domestic group (Vogt 1969: Chapter 4, 127).

EXPLAINING VARIATION IN CANONICAL COMMUNICATION

This summary has illustrated the considerable intra- and interregional variation in the degree to which features relating to canonical communication are found in houses in the coded sample. Is it possible to explain the observed variation? As I coded the community and house data, I began to notice a spatial patterning in the occurrence of symbolic content of houses that eventually led me to propose and evaluate several explanatory hypotheses. It seemed to me that regions characterized by a greater elaboration of canonical communication were also regions characterized by cognitive models favoring various forms of what I will term complex households, including multigenerational stem families and extended families (where adult collateral relatives continue to reside in the same household), as opposed to nuclear households. For example, among my East Asian and South Asian cases, the most complex examples of symbolic expression in houses were located in a band extending from Japan, Vietnam, Northern Thailand, Taiwan, and South China, west across the northern edge of South Asia, particularly Nepal and adjacent upland areas of India. This spatial distribution seemed to me to correspond in part to the north-to-south variations in household sociology found in China and South Asia and summarized by Jack Goody (1990: Chapters 4 and 8).

Although throughout China there are differences in household form and function, depending in part on social status and wealth, among other factors (Goody 1990: 97–104), there exists in the more southern regions of China a greater emphasis on lineage ideology and forms of marriage and strategies of heirship that affirm the solidarity of male agnates and the continuity of the multigenerational extended household (1990: 104–110). An analogous differentiation is found between the north and south of India, where there is a greater emphasis on agnatic solidarity in the north (1990: Chapter 8).

This spatial pattern led me to consider the possibility that canonical communication might be an integral part of a particular type of social reproductive strategy that I will refer to as a "household continuity strategy." Here, an emphasis is placed on household continuity through multiple generations, agnatic solidarity, and a communal multifamily economy. A result of this kind of social reproductive orientation is that dwelling groups are often complex households rather than simple (nuclear) families; hence the term *household continuity strategy.* In these centralized domestic arrangements the autonomy of younger-generation members may be sacrificed to the benefit of the larger group and its senior generation managers, who control both the household economy and the marriages of their offspring.

I hypothesize that through its material expression of cosmological principles ("ultimate sacred postulates" in the phraseology of Rappaport [1971, 1979: 119]), linking rank and power to gender and generation, the canonical communication of the house serves to sanctify the social conventions of the household continuity strategy. This is similar to Bloch's (1977: 289) suggestion that ritual communication varies in amount with the degree of institutionalized hierarchy and supports hierarchy by making inequality appear as "an inevitable part of an ordered system." This argument implies that such conventions may seem arbitrary and counter to the interests of junior members, thus requiring sanctification as part of this kind of social reproductive strategy, to assure compliance to its demanding requirements. By contrast, the neolocal strategy contains less inherent conflict because married children are encouraged to establish themselves as independent householders as soon as possible (cf. Lévi-Strauss 1971: 334; Strathern 1982: 46–47). Although there exists a large literature describing the

economic advantages of complex households in certain situations (e.g., Pasternak, Ember, and Ember 1976; Reyna 1976; Wilk and Rathje 1982), it is also clear that there are costs (e.g., Freedman 1958: 27; Sung-hsing 1985). Hsu (1949: 109) describes the central elements of what he calls the "big family ideal" in West Town (CH01):

> In West Town the socially upheld usage is the big-family ideal, which emphasizes unity in the household, not primogeniture. Unity is promoted by parent-arranged marriages . . . preferential mating, early betrothal—not romantic attachment. This unity is to be arrived at not so much by better adjustment of the many personalities involved as by a gradual inculcation in the individual of his or her place in the kinship hierarchy. This unity is . . . promoted by a common family home as well as by a graveyard which will be adequate for many generations. It is further buttressed by worship of the same ancestors and by unity in the clan.

Expressed here is the idea that the big family ideal requires an "inculcation" of individuals and is dependent on "promotion" and "buttressing"; evidently complex households could not persist on the basis of a rational calculation of costs and benefits by its junior members. The sources cited above (Freedman 1958: 27; Sung-hsing 1985) describe the conflicts that can result from the pooling of resources in the communal household economy (cf. Cohen 1976: 73, in his discussion of households in Yen-liao [CH05]). In the household continuity strategy, women in particular are typically at a disadvantage, married through arrangements made by their parents, into households in which there is more importance attached to agnatic solidarity and the communal economy than to the nuclear family and affinal ties, and this, too, is described as a source of conflict in Chinese households as elsewhere (Hsu 1985: 25; Sung-hsing 1985; cf. Goody 1990: 261–265 on north India). According to Fei (1939: 46), in Kaihsienkung, a newly married woman grudgingly accepts her marginal position, "facilitated by religious beliefs."

I evaluated the hypothesis that canonical communication is an outcome of a household social reproductive strategy using data from the 26 communities in my coded sample. To do this, I coded for canonical content of houses along with several variables integral to the household strategy that could be viewed as potential sources of conflict between individuals of differing gender and generations (the data are found in Appendix 7):

1. *Household strategy* (the column STR). Although the ethnographic sources do not always describe the ideals of household social reproductive strategies in sufficient detail for precise coding, it was possible to place most of the coded communities roughly along a continuum ranging from what I refer to as a "neolocal strategy" (to which is given the value 0 in the code), to the extreme forms of the household continuity strategy (to which is given the value of 2). In the neolocal strategy, the main social reproductive goal of parents is to establish married sons and daughters in independent households as soon as is possible. The neolocal strategy, as described by Shah (1974: 149) is one in which there is "a greater tendency on the part of sons to establish separate households during the lifetime of their father." While, typically, married offspring might reside in the parental house for a short period of time after marriage, this is regarded as a temporary situation. By contrast, as described above, a household continuity strategy was coded in cases in which there is great emphasis placed on the continuity of the household within the physical confines of the dwelling or compound through multiple generations. I included here cases in which continuity is based on the extended family (i.e., where collateral relatives live together as adults, as is described above in the quote from Hsu describing West Town), as well as lineal households where continuity is vested primarily in one son or daughter (e.g., Niiike, Japan [Beardsley, Hall, and Ward 1959: Chapter 9]). In Appendix 7, I indicate a value of 1 for cases where the ideal social reproductive strategy was less clearly either neolocal or of the householding form. Among the Gurung (SA03), for example, although it is the case that the youngest son tends to stay in the house with the parents, all the sons inherit equally, and it is not necessary to have a son for the parents' funeral ritual, indicating a low priority placed on lineal continuity (MacFarlane 1976: 222–224).

2. *Arranged marriage* (the column ARR). This simply codes for the degree to which parents arrange children's marriages. A "0" in the code implies that children have considerable freedom in identifying and arranging their own marriages. A coded value of 1 indicates children have some, but not total freedom in marriage arrangements, and a value of 2 implies strong parental control over the choice of mate and other aspects of the marriage arrangement.

3. *Close or distant marriage* (the column MARR). A value of 1 implies relatively close marriages are the dominant form, a situation of community endogamy. The values 2 and 3 indicate progressively greater likelihood of a distant marriage; a 2 implies local and distant marriages are roughly equally likely, whereas 3 implies most marriages are distant (i.e., community exogamy). I included this variable based on comments like those in Goody (1990: 261–265) that show how distant marriages are less desirable from the point of view of the bride, who is thus removed from her natal community. Distant marriage is at the same time more consistent with the idea that marriages of offspring are arranged strategically to achieve economic or political goals of the household heads (Goody 1990: 261–265).

4. *Pooling of household resources* (the column Pooling). This variable codes for the degree to which resources are centrally controlled in complex households (i.e., households consisting of more than one nuclear family). This was difficult to code in some cases because the actual decision making within households is rarely described in any detail; so the code indicates the practice regarded by informants as normal or usual in that community.

Two variables were coded to indicate the degree of canonical communication of the house:

1. *Gender-specific space use* (the column SX). This simply coded for the presence or absence of gender restrictions on space use or other sex-specific space uses (e.g., separate sleeping quarters for females) *within* the house. This simple presence–absence coding says nothing about the ideational bases underlying gender separation but is used as an indicator of the presence of some kind of gender-based restriction on space use in the house.

2. *Canonicality* (the column Canon). This code draws from the descriptions of houses in general in each community, but the coded value is the highest value of canonical communication of the houses described in each community (the data were not available to derive a more representative average value). To arrive at a value of canonicality, I followed the scheme outlined above in which the following features were taken to indicate the presence of canonical communication: (1) evidence of lineage ideology in the house; (2) physical evidence of liminal spaces such as shrines; (3) preferential orientation based on

cosmological principles; (4) cosmological principles that govern the layout of the house; and (5) location of the house dictated by cosmological principles.

RESULTS OF THE ANALYSIS

Tables 3-1 and 3-2 and Figure 3-11 show the results of Chi-square and regression analyses carried out with the coded variables. Table 3-1 shows the significance values of Chi-squares calculated from the cross-tabulation of the values of household social reproductive strategy by each other variable. Figure 3-11 shows the scatterplots of strategy (STR) (always on the *X* axis) by the five dependent variables (larger circles indicate overlapping points). This causal model assumes that the centralized decision making of the household strategy should determine the degree of expression of the dependent variables Pooling (centralized control of wealth), MARR (marriage distance), ARR (arranged marriages), SX (gender-specific space use), and Canon (canonicality). Because the strength of expression of both the independent and dependent variables ranges from low values (0 or 1) to higher values (2 or 3), the steepness of the slope of the regression line indicates the strength of the association. Table 3-2 lists the significance values of the *t*-test for the Beta coefficient, a measure of the steepness of the slope of the regression line.

The strongest association is found between household strategy and centralized control of resources (pooling), but there is also a strong association with arranged marriages. There is an effect, although

Table 3-1. Values of Chi-Square, Degrees of Freedom, and Significance Levels (for Total Chi-Square), Household Reproductive Strategy (STR) by Arranged Marriages (ARR), Close or Distant Marriage (MARR), Pooling of Household Resources (Pooling), Gender-Specific Space Use (SX), and Canonicality (Canon), Community Sample

	Chi-square	*d.f.*	p
ARR	8.4	4	.08
MARR	5.4	4	.25
Pooling	15.8	2	.0004
SX	6.4	2	.04
Canon	19.8	10	.03

Table 3-2. Table of Significance Values of the *T*-Test for the Beta Coefficient (for the Slope of the Regression Line), Household Social Reproductive Strategy (STR) by Arranged Marriages (ARR), Close or Distant Marriage (MARR), Pooling of Household Resources (Pooling), Gender-Specific Space Use (SX), and Canonicality (Canon), Community Sample

	R-squared	*Slope*	p
ARR	.272	.424	.02
MARR	.207	.42	.04
Pooling	.68	.486	.0001
SX	.263	.316	,01
Canon	.414	1.35	.0005

a somewhat weak one, between household strategy and distant marriages, although the statistical significance value of the Chi-square is only .25. I take these results to indicate that a social reproductive strategy aimed at household continuity across multiple generations has associated with it features that limit the degree of choice of younger family members, particularly related to the control of household resources and marriage. Interestingly, this strategy is also strongly associated with gender-specific restrictions on space use within the house and the overall canonical communicative content of houses. These results are consistent with the hypothesis that the household continuity strategy, to be successful, is built on the sanctification of social conventions that may necessitate sacrifices on the part of younger-generation members. The house itself, its layout, shrines, and so forth, is one channel of communication linking ultimate sacred concepts to the generational and gender-based ranking of individuals in their everyday activity. This brings me back to the words, previously quoted, of Pierre Bourdieu (1976: 118) where he writes that "the generating and unifying principle of practices is constituted by a whole system of predispositions inculcated by the material circumstances of life and by family upbringing, i.e., by *habitus*." But my analysis suggests that we can go beyond this kind of generalized assertion, to an expanded understanding of intracultural and cross-cultural variation in the degree to which habitus predisposes the system of everyday practice. This enhanced level of understanding is realized by elucidating the nature of the connection between meaning and behavior, by linking intentionality to cultural code (cf. Strathern 1982: 38; Wolf 1984). As

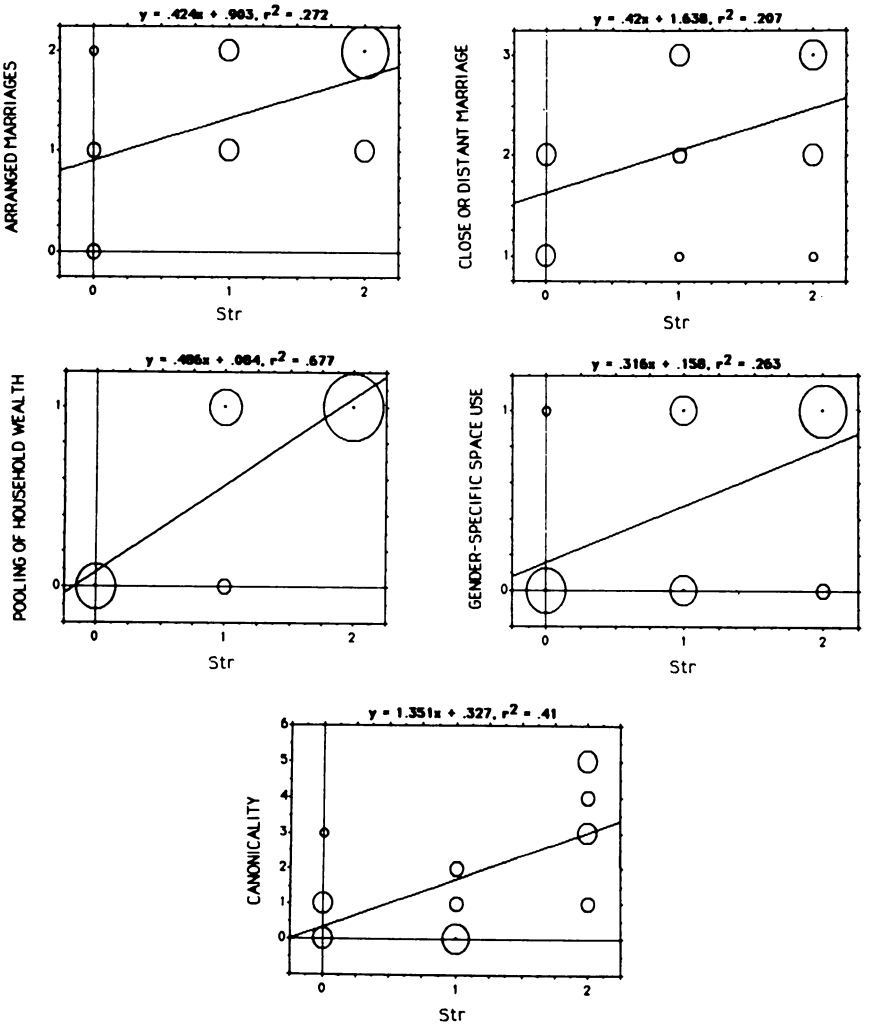


Figure 3-11. Scatterplots of social reproductive strategy (STR) by arranged marriages (ARR), close or distant marriage (MARR), pooling of household resources (Pooling), gender-specific space use (SX), and canonicality (Canon), community sample.

Miller (1987: 104) proposes, habitus does not simply reproduce rules but is related to "the enactment of strategy." In this political economy approach to household analysis (e.g., Cheal 1989), aspects of house form relating to canonical communication are, in part, outcomes of

household social reproductive strategy. My analysis suggests that their deployment will be more elaborated in situations where intrahousehold inequality and conflict are more likely. In subsequent chapters, I identify situational factors, including types of market participation, that may result in varying degrees of household conflict.

INTERHOUSEHOLD CANONICAL COMMUNICATION

The data collection for this chapter had been guided principally by the concept of habitus and thus had emphasized the importance of intrahousehold communication of domestic symbols. The houses of two regions that tend to display little in the way of symbolic complexity of habitus, Hindu India and the Southwest Asian main series, nonetheless display a considerable importance attached to a form of canonical communication through the media of house form. But it is a form related not so much to the graded internal social hierarchy of the complex household and the social reproductive strategy of household continuity, as it is to the relative social status of the household in its community (although the two forms can overlap). This difference in communicative strategy would seem to indicate something about the degree to which households are highly autonomous (emphasizing within-household communication) as opposed to being powerfully imbedded within community social systems (and emphasizing interhousehold communication of social status). I return to this issue of the relationship between habitus as intrahousehold communication versus habitus as social communication between households in my concluding chapter.

ADDITIONAL NOTES ON HOUSEHOLD SOCIAL REPRODUCTIVE STRATEGY

Household social reproductive strategy affects decisions about houses in many ways. This was addressed in this chapter primarily in relation to the symbolic loading of the house viewed as habitus. The strategy of household continuity was found in association with a greater elaboration of those physical manifestations of symbols related to the creation and preservation of hierarchically structured social relations,

based on gender and generation, in the pooled domestic economy of the complex household. But other aspects of the structure and function of houses are related to social reproductive strategy. For example, among the houses of households emphasizing the continuity strategy, there are likely to be not only more rooms, but more rooms with specialized functions (gender-specific rooms, household shrines, and generation-specific living/sleeping rooms, in particular). One can also predict the presence of a more hierarchical structuring of spaces, especially as generational rank is manifested through the hierarchical structuring of sleeping/living spaces. These variables are reflected in my graphical measures of scale, integration, and complexity, as is illustrated in Table 3-3. For each coded community, I developed a composite picture of the major features of a "basic house" and a "costly house" (the data are found in Appendix 8). A basic house is the simplest example of a house that, within that community, would be a socially acceptable house. A costly house shows all the features of the most elaborate houses found within that community. Table 3-3 summarizes the differences between basic and costly houses in the community sample, broken down according to the nature of the social reproductive strategy.

Given the small sample size (six or seven cases for each, because I did not include cases coded as "intermediate" in their form of social reproductive strategy), the differences between the two subpopulations are not statistically significant at high levels. In particular, the basic

Table 3-3. Mean Values and One-Tailed *T*-Test for Difference of Means between Basic Houses (B) and Costly Houses (C), from the Community Sample

	Neolocal strategy	*Continuity strategy*	*Significance*
Nodes in graph (B)	5.0	6.5	.19
Hierarchical levels (B)	2.9	2.8	.48
Circuits (B)	.17	1.5	.13
Access ranks (B)	2.4	3.2	.27
Specialization index (B)	.9	2.3	.07
Nodes in graph (C)	12.6	22.0	.11
Hierarchical levels (C)	4.4	6.3	.04
Circuits (C)	1.7	10.7	.08
Access ranks (C)	6.2	12.6	.08
Specialization index (C)	4.7	11.0	.06

houses show only a minimal degree of difference for most of the measures. But the costly houses of a rural elite, who are in a position to fully manifest the cognitive model of household continuity, make up a population of houses that is among the largest and most complex in my sample.

HOUSEHOLD SOCIAL REPRODUCTION AND CURATORIAL CONSUMPTION

Although the data available to me were too limited to develop a comparative scale of costliness of construction materials and techniques, my impression is that these same complex households also tend to build houses using comparatively costly building materials. I infer from this that the large size and spatial complexity of these houses is not only a structural outcome of the household continuity strategy but may also be an integral part of a strategy that requires the construction of houses that are costly in several respects. In West Town (CH01), for example, where households tend to display a household continuity strategy, the social status of a household is communicated through the material form of the house. Practical concerns such as leaky roofs and cramped living quarters are of less concern than the social communication of status that a costly house provides. As Hsu (1949: 36) puts it: "In sharp contrast to such obvious neglect of the comforts of living are the painstaking effort and thought expended on the appearance of these houses." For most young married couples of wealthier households, the social reproduction of acceptable levels of social status would be problematic given the high costs of building new houses. According to Hsu (1949: 114–115), it is only among the very wealthiest households that junior couples are able to afford the construction of new houses, and then, evidently, only when the household estate is divided. Many married couples continue residence in the parental dwelling even after estate subdivision (Hsu 1949: 113–122). In West Town and similar situations, I infer that for at least some families, social reproduction of status is maintained only through continued residence in a parental dwelling (or compound). Thus, for senior couples, a substantial expenditure on a costly house that is not only large and spatially complex, but that also makes use of expensive

building materials, may facilitate their social reproductive strategy of household continuity. This is like the "curatorial consumption" described by McCracken (1988: Chapter 3), in which consumer choice is understood as "something that involves the family in an act of identity construction. The family is buying not merely the economist's bundle of utility, but also a set of signs that will serve to represent and to constitute the family's character" (p. 50). Cohen (1976: 23) mentions that in Yen-liao (CH05) it is easier to add rooms to existing compounds than to build new houses, thus decreasing the likelihood that households will fragment. Morrison (1939: 79) makes the same point in explaining the presence of large household compounds in Alişar (SWA07). Wilk (1989), describing the Kekchi Maya, argues that a consumer strategy that involves expenditures on goods, like houses, that benefit the whole family, is related to household continuity. In such houses everyone "gets to listen to the radio, everyone walks on the concrete floor, everyone shares the bittersweet envy of neighbors. Everyone, that is, who remains in the household. And this sharing is a potent device, on the part of the parents, in the struggle to keep children attached to the household after they marry" (p. 311).

A curatorial strategy is found in Niiike, Japan, a village where there is a well-developed sense of household continuity. A well-kept house, as described by Beardsley, Hall, and Ward (1959: 77), is "an important symbol of a stable and enduring family." Unlike West Town, these dwellings are not in any case highly decorated or in other ways elaborated (there is an "air of restraint" in house decorative elaboration), and all of the houses in the village are essentially the same (Beardsley, Hall, and Ward 1959: 78). But all dwellings are comparatively well-constructed and costly. Their construction requires the labor of several different specialists, and some construction materials must be obtained from outside the community (Beardsley, Hall, and Ward 1959: 91–92). Adding to the cost is the necessity of hiring a "house planner" whose efforts assure that "astrological directions are safeguarded" (Beardsley, Hall, and Ward 1959: 92; Critchlow 1977). Geomantic requirements not only add to the cost of building a new house, they also restrict the number of potentially acceptable house sites (as is true elsewhere where geomancy is practiced). I suggest that geomancy is another facet of curatorial consumer behavior bolstering

the household continuity strategy. Geomantic requirements would be one factor limiting the ability of young married couples to construct socially acceptable new houses.

Curatorial consumer behavior stands in sharp contrast with a situation like that found among the nuclear families of the Thai rural core, where houses are described as small, easily dismantled, and built of simple materials (Sharp, Hauck, Janlekha, and Textor 1953: 124–126). In Tamansari, Java (IP01), the neolocal strategy is associated with houses that are easily assembled from parts that are "interchangeable," and thus readily available in local markets to be bought and sold as needed (Jay 1969: 48, 223). In Cherán (MS003), according to Beals, Carrasco, and McCorkle (1944: 31, 88), houses are easily moved; this "facilitates inheritance."

Chapter 4

Indexical and Social Boundary Communication

In the first chapter, I discussed two theories of variation pertaining to the external decoration of the house. The first, termed *indexical communication,* relates to how the residents of households use decorative elaboration to communicate about wealth status to other households. The other, which I termed *social boundary communication,* stems from the argument that members of strongly integrated social entities will demarcate boundaries between themselves and other social entities using material communication in the form of decorative elaboration. This hypothesis was proposed by Hodder (1982: 185–191), based on comments in Douglas (1970; cf. Wobst 1977). Social boundary communication might include house facade decoration and other aspects of house decoration in the context of strongly integrated households, as is hinted at by Waterson (1990: 139) in her discussion of "house societies" in Southeast Asia (following the suggestions of Lévi-Strauss 1982: Chapter 13; cf. Marshall 1989: 20). Although it is not necessarily the case that indexical and social boundary communication represent antithetical theories of external decoration, I evaluate them comparatively below.

As I coded the house data, I began to notice regional differences in the degree of external communication by means of decoration. Because the communicative media are so varied from region to region, I was faced with the difficult task of formulating a suitable comparative

method that would allow me to characterize the variation in a way that would permit the cross-cultural testing of hypotheses. An additional stumbling block to comparative analysis is the highly variant quality of the data available to me. Sources ranged from high-quality photographic images and detailed drawings to crude sketches that ignored most details, and fuzzy photographs that look as though the photographer had tripped or jerked just at the moment the film was exposed. An effective comparative method needed the capacity to incorporate sources of varying quality, while precluding the possibility that the better-described houses would always be coded as having more decorative elements.

There are a number of different ways external communication could be coded (cf. Wiessner 1989: 60), but the particular strategy I developed takes the same perspective I took in coding the structural properties of houses. My method looks at the decorative elements that would be seen by a person engaged in formal visiting, who is passing from the outside into the formal entrance leading to the front regions of the house. (In a very few cases, the facade faces a street or other public area where it is readily visible, but the main entrance is located elsewhere; in these cases I coded the facade, not the entrance area.) Decoration of other areas of the outside of the house is not included in my assessment of external decoration.

I describe the decoration seen by the visitor in terms of (1) "preentry elements," (2) facade elements, (3) roof elements, and (4) design formality. I found it important to include preentry elements in my assessment of external communication, rather than focusing only on facade and roof decoration because some housing traditions may make communicative use of what I call forecourt spaces, located in front of the facade (e.g., landscaped yards in the suburban United States). In my sample, preentry elements included, variously, decorated external courtyard walls and their gates, and decorative treatment of courtyard spaces in front of the facade, such as finished pavements, steps or stairs, and landscaping.

In counting the number of decorative elements (on external walls and their gates, facades, and roofs), I counted the number of major categories of elements. For example, a wall painted in one color counted as one element, two if painted primarily in two colors. But a

decorated band around a window, containing, for example, geometrical designs in several colors, would be counted as one element. If the same element were found painted around several similar windows, it still counted as one element, but if a distinct type of banding were found around another group of windows (on another floor, for example), it would count as another decorative element. This method was adopted due to the previously mentioned variability in the quality of the sources, which precluded a more detailed descriptive accounting. It was almost always possible to identify the number of major decorative elements present on walls, gates, doors, roofs, or facades, even when it was impossible to determine their composition in detail. For example, even where a poor photographic image did not allow me to describe in detail the content of a decorative band—does it have geometrical designs? flowers?—I could almost always identify the band itself as a distinct type of decorative element. Many facades would have much higher counts of decorative elements if each minor decorative feature could be counted separately. My method sacrifices this kind of detailed enumeration but allows me to include in my coded sample a larger number of cases, including many inadequately described examples.

One other aspect of external communicative strategy was noted in the coding. Preentry, facade, and roof designs that show symmetrical placement of features were coded as illustrating "formal" design. This variable captures the degree to which the decorative elements are combined into a coherent pattern that makes use of axiality and balanced symmetry of preentry, facade, and roof elements (cf. my discussion of formal layout in public buildings in Blanton 1989). I suggest that the coherence of formally arranged decorative elements heightens their visual impact, analogous to the enhanced "imageability" of the planned cities discussed by Lynch (1960). In the Roman houses described by Watts (1989: 34), coherent arrangements "accentuate the act of transition from the street into the house." The presence of formal design indicates to me that imageability was a central consideration in some aspects of the overall plan of the house. Formal design places the main entrance (or comparable feature, such as the central hall in Lebanon) at the center of the facade, which then dictates that the floor plan of the house conform to the positioning of that

entrance. Similarly, a formal facade places windows, porches, roof elements, and other features in positions creating a balanced symmetry of elements "framing" the formal entrance, again indicating that communicative concerns dictate the positioning of some architectural elements of the house (as opposed to, for example, internal space use). In some cases, one portion of a facade shows formal design, whereas other portions are irregular. This was coded as "some" formality. If the positioning of all architectural and design features of a preentry, facade, and roof elements is dictated by a coherent design, the house was coded as "formal."

In Appendix 9, the variable DEC is the sum of elements of external decoration for each house in the house data. The variable DEC sums the values of

1. Number of forecourt wall decorative elements, including wall decoration, wall trim, gate frame, and gate decoration.
2. Forecourt (i.e., space between the edge of the property or gate and the formal entrance), where 0 = none, 1 = present, and 2 = present with decorative elements (this simple code was necessitated due to the often fragmentary descriptions of the forecourt area).
3. Number of facade decorative elements.
4. Number of roof decorative elements.
5. Symmetry of forecourt, facade, and roof elements, where 0 = none, 1 = some, 2 = formal.

Figures 4-1 through 4-3 illustrate the external decorative elements of several houses and indicate how they were coded.

Figure 4-4 and Table 4-1 summarize the descriptive statistics for the sum of external communicative elements in the house data by region, and Figure 4-5 is a histogram of values of DEC in the house sample. China has the highest mean value of external decorative elements but also the largest standard deviation. Southwest Asia "other" and Nepal also have high values and large deviations around the mean, whereas Mesoamerica, Southwest Asia "main series," and India show considerably smaller values and deviations.

There is a substantial range of variation in the degree to which houses communicate through external decoration, ranging from situa-

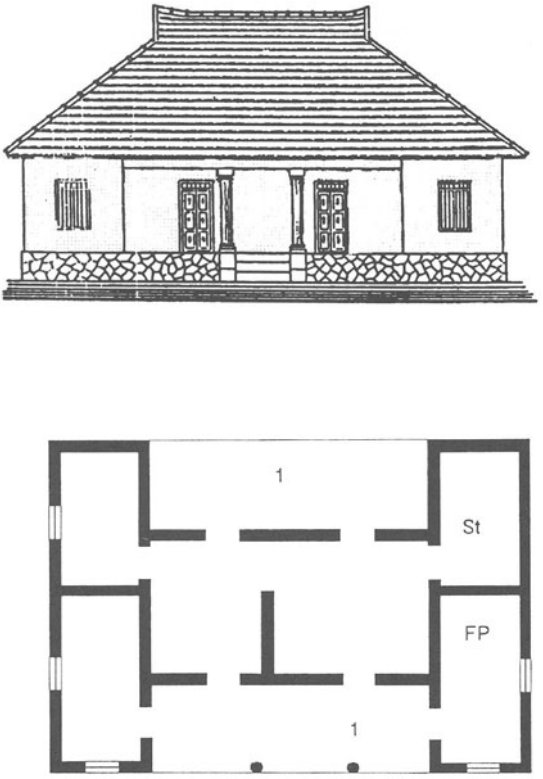


Figure 4-1. SA012, modified from the 1961 Census of India source, following page 116. A high-class house of Kerala. Coding for decorative elements counted: decorated window frames, carved doors, columns framing stair, whitewash, raised ends of roof line, and formal facade.

tions like some of the Nubian and Chinese houses (Figures 4-2, 4-6, 4-7, 4-8, and 4-9), to "introverted" situations like some Southwest Asian and Mesoamerican villages where blank mud-brick walls are common (Figures 4-10 and 4-11). As I was coding the house data, I began to perceive differences that I thought might explain why some regions tend to have more, and some less, external decorative elaboration. One line of evidence seemed to support the social boundary thesis, in the sense that regions characterized by a higher frequency of autonomous, large, and complex households seemed also to be char-

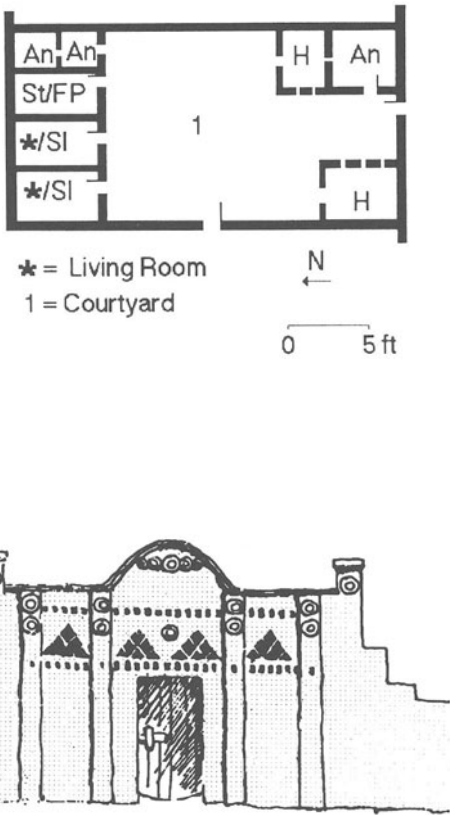


Figure 4-2. SWA158, Kenuzi, northern Nubia. Modified from Jaritz (1973: House B5a, Figures 21 and 22). Coding for decorative elements included posts and circular cornice elements framing door, pilasterlike strips framing door, molded cornice, decorated plates embedded in wall, wall perforations, paint (forecourt); for the facade (not shown): paint, molded cornice, wall perforations, embedded decorated plates, circular element on cornice, painted figures.

acterized by a greater expenditure devoted to external communication. I evaluate this below, using the community data.

On the other hand, I also noted variation by type of prevailing economic activity within households. Specifically, regions characterized by more household involvement in long-distance trade or other external economic activities (i.e., involving transactions beyond the limits of the local community and local markets) seemed to have more external decoration. If some households in these trading areas have more wealth, perhaps they tend to have the resources

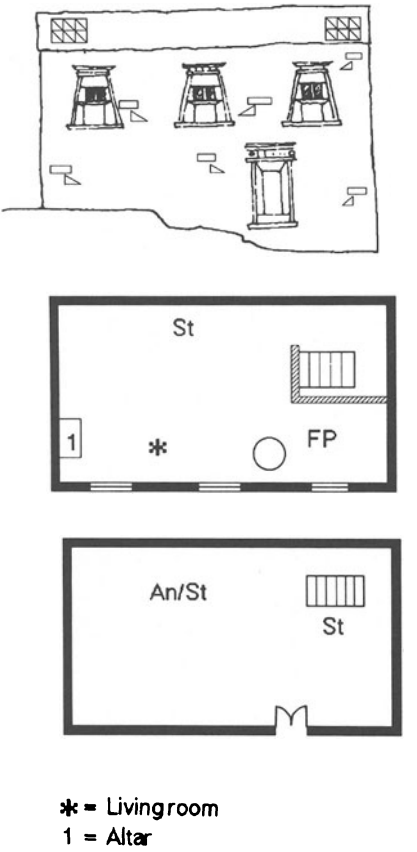


Figure 4-3. SA008, Sherpa house, Nepal, modified from Milliet-Mondon (1982: Figure 18). In the figure, roof symbols imply wood shingles; wall construction is stone. Facade decorative elements include panel over door, door decoration, carved window shutters, carved window frames, panels over windows, partial symmetry of facade.

available to devote to decorative elaboration. Based on comments in the ethnographic sources, however, I began to perceive the possibility that wealth was not the only causal factor and that, instead, decoration could be better understood in terms of household communicative strategies.

Another possibility I kept in mind as I coded relates to Wittfogel's comment (1957: 86–87) that "introvert" architecture is found in the context of "agrobureaucratic society," as a strategy for concealing wealth from a predatory state apparatus. I could find no evidence that

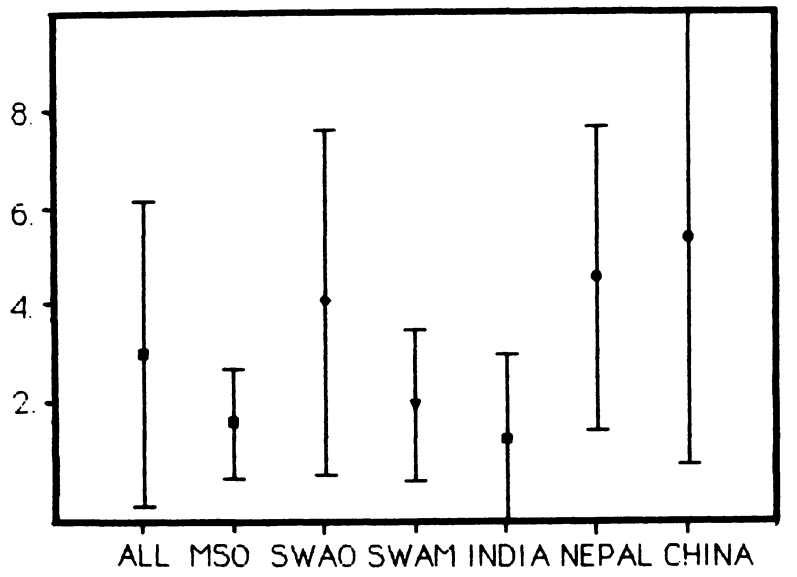


Figure 4-4. Mean and 1 standard deviation, number of external decorative elements by region, house sample.

this particular factor operated in any of the cases in my sample, but I return to reconsider this hypothesis briefly in my concluding chapter. First I evaluate the social communicative hypothesis.

SOCIAL BOUNDARY COMMUNICATION

I utilize the community data to evaluate the social communicative hypothesis. To do this, I needed a measure of external decoration that

Table 4-1. Statistical Summary of Values of External Decorative Elements (DEC), by Region, House Sample. From Appendix 9

	Mean	*S.D.*	N
Whole sample	3.1	3.1	194
Mesoamerica	1.7	1.4	16
Southwest Asia other	4.1	3.5	60
Southwest Asia main	2.0	1.6	49
India	1.3	1.8	32
Nepal	4.7	3.1	15
China	5.5	4.7	16

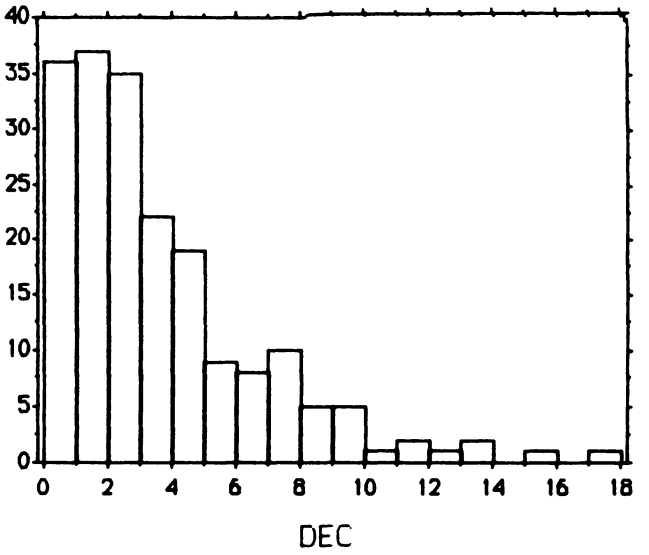


Figure 4-5. Histogram of values of external decorative elements, house sample.

could stand for each community. Initially, I thought that the best summary measure would be an average value, but this proved problematic given the incompleteness of the information in most cases. I substituted for an average value the highest value that I was able to code for each community (DEC in Appendix 10). Given the nature of the data, I was thus provided with more usable cases, but as a consequence I am placing a greater emphasis on the communicative activities of the wealthier (or at least "showier") households.

The distribution of values of external communication for the community data (Figure 4-12) has approximately the same range as the values from the house sample (Figure 4-5), but the distribution, as might be expected, is considerably shifted to the right and looks more like a normal curve. Measured this way, the average value of external decoration for the community sample is 5.5 (S.D. = 3.6, N = 22), compared with 3.1 (S.D. = 3.1, N = 194) for the house sample.

Where households are comparatively more autonomous, then social boundaries between them should represent lines of cleavage in more strongly segmented community (or regional) social landscapes. Where households are more firmly embedded within communal (or

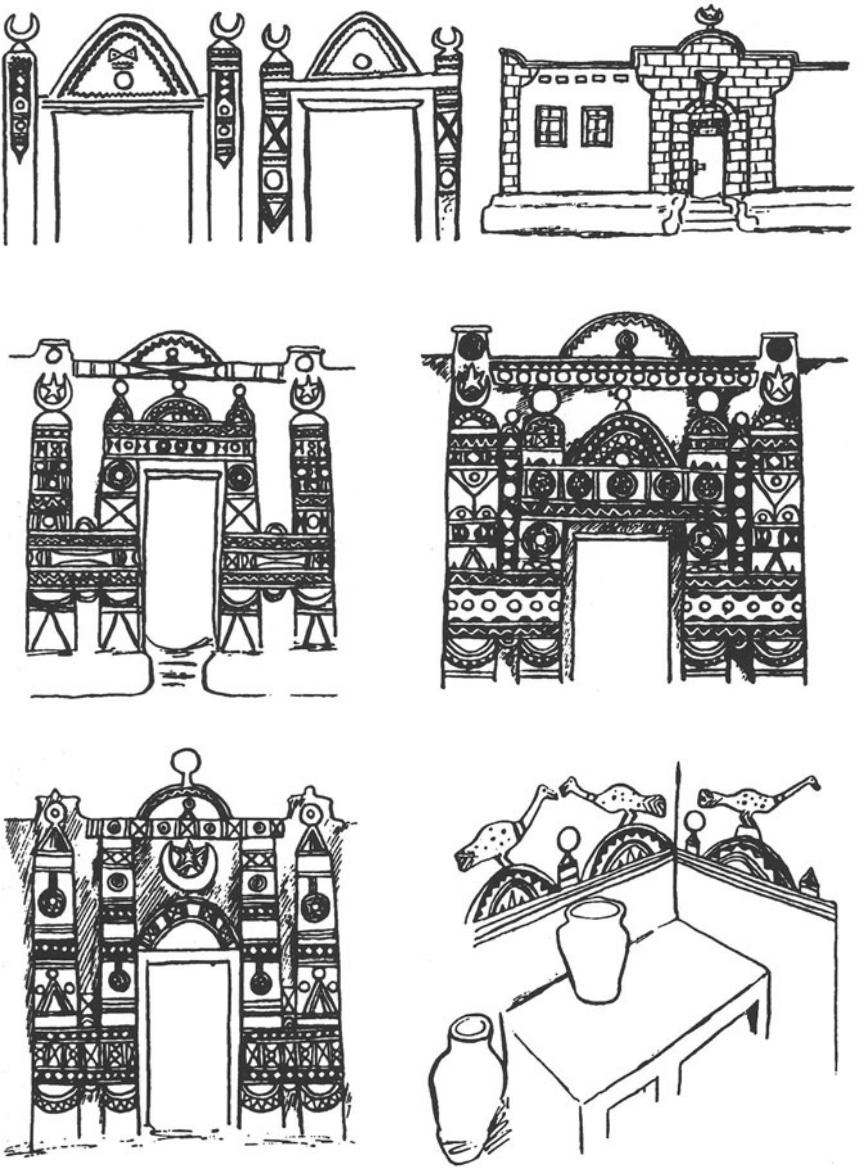


Figure 4-6. Examples of house entrance decoration, Nubia. Modified from Wenzel (1972: Figure 43).

Figure 4-7. House gate, West Town (CH01). Modified from Hsu (1949: 31).

regional) social systems, their external boundaries should be correspondingly more weakly delimited. According to the social boundary hypothesis, there should be more use of decoration to manifest social boundaries in the first instance, with such social marking less evident in the latter cases characterized by more embeddedness. Variation in the degree of social cleavage can be viewed in two ways, from a household perspective (which emphasizes variation in degree of household integration) and from a community perspective (which would emphasize the degree to which households are embedded within the larger social system of the community). Based on my previous analysis of household variation in Chapter 3, I used household social reproductive strategy (the variable STR) as my main indicator of the degree to which households are integrated and autonomous. As before, a value of 2 for STR implies a strategy of multigenerational household conti-

Figure 4-8. Nubian house near Aswan. Photograph by the author.

nuity in which the expressed ideal is one in which married sons or daughters continue residence for an extended period in parents' dwelling or compound; this is highly correlated with a pooled household economy. A value of 0 for STR implies the neolocal strategy, where the ideal is for married offspring to move away from parents' household in order to establish independent nuclear households (a value of 1 implies an intermediate strategy).

Viewed this way, the social boundary hypothesis is not strongly supported. Figure 4-13 shows the scattergrams for the values of STR (x-axis) by DEC (y-axis) (one eliminating the effects of the Chinese communities, which tend to have exceptionally high values of external decoration). Although there is a slight tendency for values of 1 and 2 for household strategy to have higher values of external decoration (giving a somewhat upward-sloping regression line), the value of r-square for the sample as a whole is only .13 (p = .1). When I eliminate the Chinese communities, which tend to have household continuity strategies and comparatively high values of external decoration (the bottom graph of Figure 4-13), r-square drops to .05 (p = .39). This

Figure 4-9. Nubian house near Aswan. Photograph by the author.

seems to falsify the social boundary hypothesis insofar as I can assume that my social reproductive strategy variable is an adequate means of evaluating the importance of intrahousehold integration.

My next step was to evaluate the degree to which households are embedded within larger social systems; more embeddedness should imply weaker household boundaries. This included links to community and regional institutions, as well as linkages between households at a more localized scale of interaction, including informal networks.

Figure 4-10. Panoramic view of Aliabad, Iranian Kurdistan (SWA04), 1975. Photograph courtesy of Carol Kramer.

Figure 4-11. Colhuacan, Teotihuacan Valley, Mexico (in the vicinity of MS0016–018). Photograph courtesy of Thomas H. Charlton. Copyright Thomas H. Charlton.

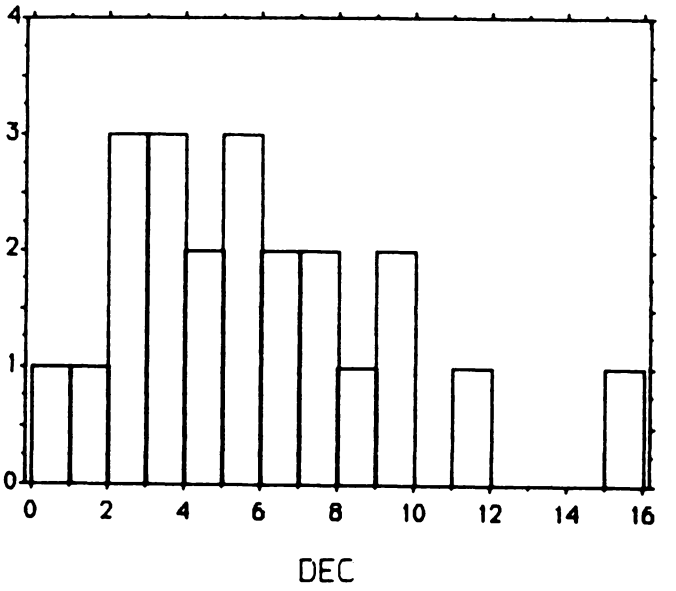


Figure 4-12. Histogram of values for external decoration (DEC), largest values for each community in the community sample.

For example, in Tamansari, Java (IP01), neighborhood networks extensively link households through exchanges of labor, loans, and tenancy arrangements (Jay 1969: Chapter 8). Ideally, a coding scheme measuring the degree of integration of households in larger social fields would be based on a measure of the proportion of various kinds of transactions taking place between as opposed to within households, but no such data can be found. However, based on my knowledge of the sample variation, I was able to devise a coding scheme that compares the degree of social embeddedness of households in terms of the relative importance of interhousehold exchanges of labor and materials, communal burial of the dead, and communal ritual. I also attempted to develop a coding scheme for degree of corporate ownership of productive resources (and public buildings), but I was forced to abandon these variables due to the relative paucity of data. I coded as follows:

(a) Redistribution (variable RI in Appendix 10). This was coded as 0 = none or minor, 1 = present but not pervasive, and 2 = important. The coding was based on statements by the ethnographer regard-

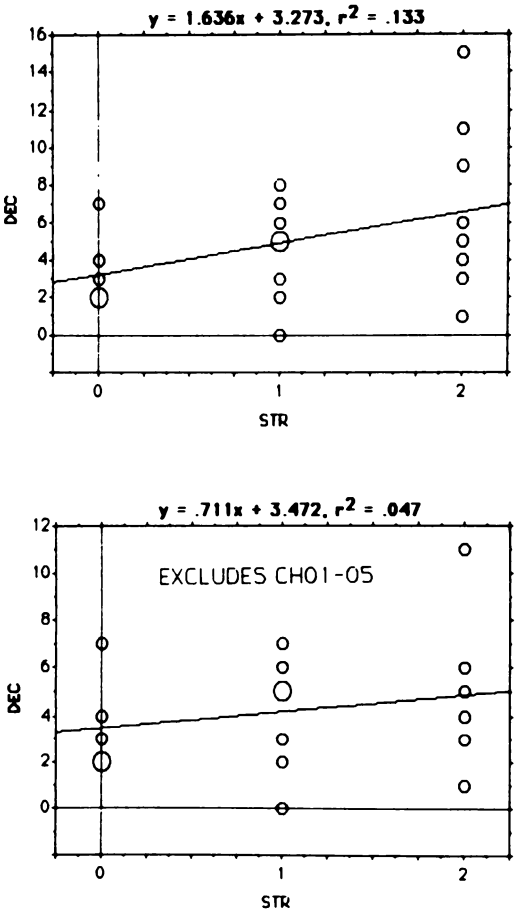


Figure 4-13. Scattergram of household social reproductive strategy (STR) by external decoration (DEC), whole sample (upper), excluding Chinese cases (lower).

ing the degree of economic autonomy of households compared to the degree to which families make use of interhousehold networks. It also considers the extent and importance of formal community institutions that involve redistributive activities (for example, ritual involving interhousehold exchanges of food, etc.). The major regional distinction seen in this variable is to be found in the contrast between the Mesoamerican communities, which tended to have values of "2" (except for MS005, with a value of "1"), and most of the rest of the

sample. Only Niiike, Japan (IP02), and Mohla, Pakistan (SA02), had redistributional exchange that appeared to me as thoroughgoing as that found in the Mesoamerican cases.

(b) Communal Burial of the Dead (variable CE in Appendix 10). This was a simpler case of coding presence–absence (0 = absent, 1 = present). Present was coded for one or more cemeteries, so long as they are communal. Communal cemeteries that were used by villagers but not located in the village were coded as "1" because the most important aspect of this variable is whether or not households have private burial plots.

(c) Communal Ritual (variable CR in Appendix 10). This was a much more complex variable to code. From the ethnographic descriptions, I made a list for each community of the major and minor ceremonies of the annual ritual cycle for the community as a whole (including religious as well as secular ritual). I excluded from these lists what I refer to as "ritual occasions" that may occur as part of the annual cycle but that are primarily household-oriented. For example, in Kao Yao, China (CH03), there is a complex annual round of some 11 festivals, but they tend to focus on household-based ancestor worship (Osgood 1963: Chapter 21). I also excluded rituals that are part of the annual cycle, but where it is specifically stated by the ethnographer that few households actually participate. My code ranges from 0 (communal ritual unimportant), to 1 (few, usually 1 to 3, rituals per cycle that meet my requirements), to 2 (important, with 4 or more during the annual cycle).

All three community integration variables show a negative relationship with amount of external decoration (Figure 4-14). Redistribution has a weak but statistically significant relationship (r-squared = .19, p = .05), mostly due to the fact that the Mesoamerican communities as a whole tend to score high on redistribution and low on external decoration (excluding them, r-squared drops to .065, p = .3). Communal burial is strongly negatively related to external decoration (r-squared = .6, p = .0001). Again, the statistical outcome is due largely to patterns of regional variation reflecting common cultural practices found among culturally related cases. The absence of communal burial is found mostly in China, whose communities tend to have high values of external decoration (except for SEA02, the

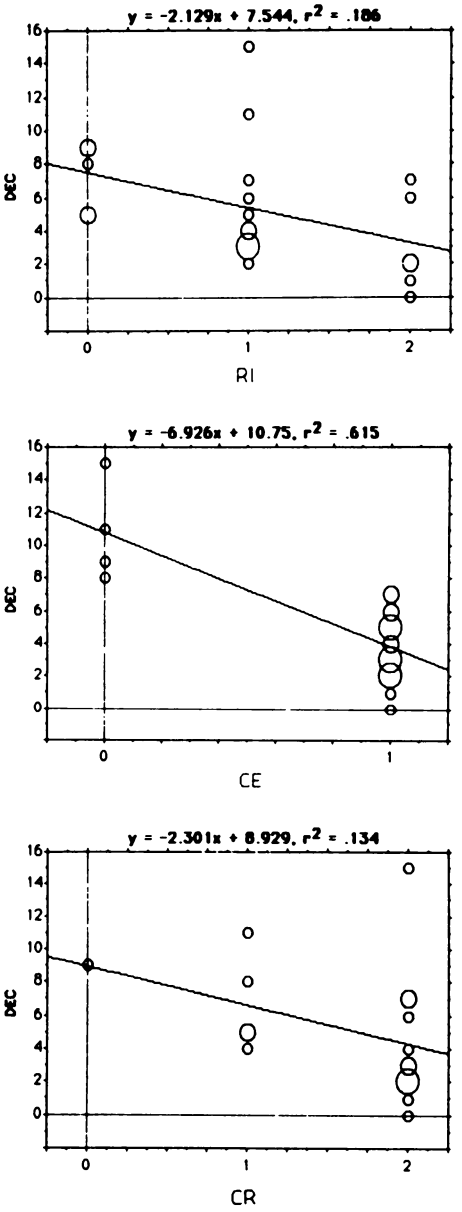


Figure 4-14. Crossplots, community redistribution (RI) (top), communal burial of the dead (CE) (middle), and communal ritual (CR) (bottom) by external decoration (DEC), community sample, from Appendix 10.

Vietnamese village, which also has very high values of external decoration). Communal ritual shows the weakest relationship to external decoration (r-squared = .13, p = .13). Note that West Town, Yunnan Province, China (CH01), which has the highest value of external decoration in the community sample, is described by Hsu (1949: 22–23) as having a large number of "major annual ritual observances" that are evidently not simply household or clan rituals.

I combined redistribution, communal burial, and communal ritual into an overall measure of community integration (the variable INT in Appendix 10). Figure 4-15 shows the relationship of this variable to external decoration (r-squared = .33, p = .01). Very tentatively, I conclude that there is a weak negative relationship between these two variables, with higher values of integration corresponding to lower values of external decoration. But the strength of the statistical relationship is due in part to the near duplication of similar cases from particular cultural regions. In particular, there is a notable difference between the Chinese communities, on the one hand, that tend to score

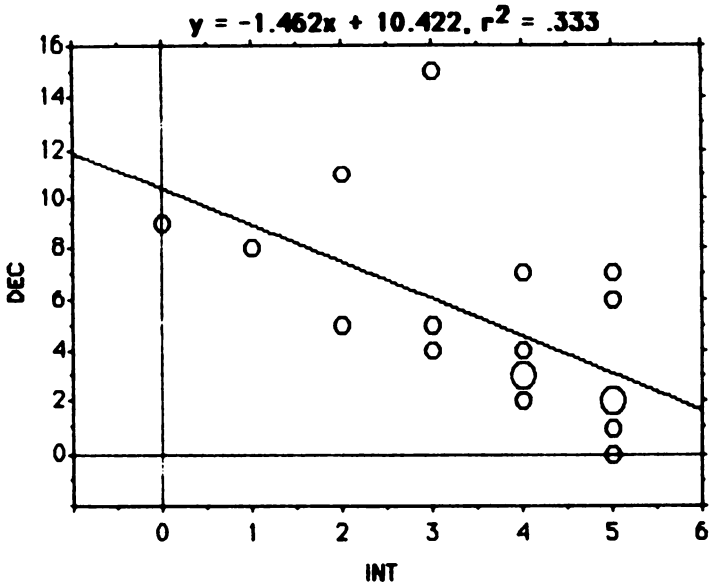


Figure 4-15. Community integration (INT) by external decoration (DEC), community sample.

high in external decoration (8–15) and low in community integration (0–3), and the Mesoamerican communities on the other that tend to score low on external decoration (0–7) but score among the highest in community integration (4–5). Several other cases, however, show the pattern expected from theory. Tamansari, Java (IP01), has moderate integration and low values of decoration, and Mohla, Pakistan (SA02), is like the Mesoamerican communities in high integration and low decoration. Khan-Hau, South Vietnam, is more like the Chinese communities in having low integration and comparatively high decoration (of course, this is an area showing considerable Chinese influence in several regards, including some aspects of the form and decoration of houses).

It seems reasonable to expect that population size of the community might have some relationship to integration and hence to decoration. Presumably, all other things being equal, we might expect lower values of integration in larger communities, and thus, perhaps, more tendency to sharply delimit household boundaries. But population size, in the communities of my sample, has virtually no relationship with integration (r-squared = .027, p = .48) and has only a slight effect on decoration (r-squared = .106, p = .16).

Interestingly, the highest value of external decoration among the Mesoamerican communities (at 7, above the average for the community sample as a whole) is Cherán, Michoacán, Mexico (MS003), a community that has communal burial, extensive interhousehold exchange, an elaborate ceremonial cycle, and a nuclear family strategy. (It also scored high on communal ownership of resources and on the comparative importance of public buildings, two additional measures of community integration I did not pursue in the present analysis.) All of this should surely indicate a situation in which households are extensively imbedded within a highly integrated community structure. It is also the only Mesoamerican community in my sample in which external long-distance trading is an important economic activity of a large number of households. This clue drew me to an alternate—or at least complementary—hypothesis for explaining variation in external decoration, in which decoration is understood more as a strategy of indexical communication than as a manifestation of social boundaries between households. I look at this idea next.

INDEXICAL COMMUNICATION

Among the localities from which I coded for the house data, several seemed to me to have households that combine an elaboration of external communication by means of house decoration with a particular type of household economic strategy. These are all rural houses, but they are engaged in more than just agricultural production for home consumption and local markets. In this group, connections over long distances, involving especially long-distance trade, but also the export of labor and exotic commodities to urban markets, supplement local agricultural and craft commerce. These villages are situated in politically peripheral boundary areas between, or along the edges of, major urbanized regional systems. In some cases, their economic strategy is predicated on the existence of a division of labor between adjacent macroregions, which provides opportunities for trade along the routes linking the core zones. In other cases, these intermediate regions themselves develop production specializations, often high-order exotic goods not produced in the core zones (or labor export), that link them through a division of labor between cores and peripheries. Or both production and exchange adaptations may coexist. I discuss cores and peripheries in more detail in Chapter 5.

Southern China is one area where periphery adaptations are found. In West Town (CH01), for example, some members of some households engage in long-distance trading along the nearby Burma Road linking China with Southeast Asia; in addition, opium growing and trading were both important to the local economy (Hsu 1949: 21). Even after the 1930s, when the central government outlawed opium use in China, its cultivation and trade continued as an important commercial activity (Hsu 1949: 22); it could persist only because the central government was comparatively weak here. Nepal is another area where many households traditionally engaged in what Schrader (1988: 55–56) refers to as "transitional trade," linking the production specializations of China and Tibet on the one hand, and India on the other. A wide range of commodities passed through this periphery, but among the most important were salt from Tibet and rice from the lowlands to the south (Schrader 1988: 15, passim) (cf. Fisher 1986). The Gurung of Nepal (SA03) had been involved in the trans-

Himalayan trade, until the closure of the Chinese border (MacFarlane 1976: 26). With the decline in trade, the export of male labor as professional (Gurkha) soldiers developed as a substitute periphery strategy. Nubia, situated along the Nile River, intermediate between two major centers of power, Egypt and the Sudan, provides a prime example of rural periphery households with an external economic orientation. Nubian households have traditionally involved themselves in long-distance trade and labor export to the core urban zones (Fernea 1973: 4, 8, passim; Scudder 1966).

Additional periphery areas from which houses were coded in my sample include Yemen (whose marginal political and economic situation historically is described in Stevenson 1985). The often decorationally elaborate houses of Jordan and Lebanon (SWA193–195, 198–204), characterized by highly formal designs of the central-hall and Liwan plans, are also found in a transitional zone intermediate between Southwest Asian and Mediterranean cultural and economic zones (e.g., Gulick's [1955] description of a Lebanese village where a major economic strategy is labor export [p. 55]). Although the situation is less clear for Turkey, clearly at least some degree of periphery adaptation is found there as well, for example at Alişar (SWA07), where export of a valuable type of mohair wool for distant urban markets is a major economic activity.

Several features of the houses of externally oriented households deserve comment. First, it is of interest that many of my Southwest Asian "other" houses are assignable to this category, including houses from Nubia, the Levant, Yemen, and perhaps Turkey. These are all areas influenced by Islamic housing practices, for example, architectural plans that isolate women from male guests (not all of these areas are exclusively Islamic; in Lebanon, Christian, Druze, and Muslim religions are found, and their houses are similar, according to Ragette [1980: 179]). Within this large area of largely Islamic practice, the periphery houses illustrate an important departure, in that they show a tendency toward extensive external decoration, particularly when contrasted with the Southwest Asian "main" series. According to Petherbridge (1978: 197), Islamic domestic architecture is "introverted," with facades that are minimal or hidden behind courtyard walls. According to him, what decoration there is often consists of apotropaic (auspi-

cious) elements, but I found this to be only partially the case. Much of the content of decoration could be interpreted as indexical as well as apotropaic; in fact the latter was rare. Many of the houses in my Southwest Asian "other" sample are very showy, and in a way that can be seen publicly. This is illustrated in Table 4-2, which tabulates my coding of whether facades were openly visible to outsiders (a value of "0"), partially hidden from view ("1"), or hidden from public view ("2") (introverted) (from Appendix 9). Petherbridge is correct regarding the Islamic houses of the Southwest Asian main series, which show the most pronounced tendency of all the regional samples to have partially hidden or introverted facades. But the other Southwest Asian houses are more like those from China and Nepal in having a large proportion of houses with openly visible facades.

A second feature of note regarding the more externally oriented households is that they often adopt urban housing forms for rural use. This produces the sometimes incongruous appearance of rural villages that look like miniature towns or cities and stands in sharp contrast with other areas, for example, the Southwest Asian main series and Mesoamerica, where there is a notable distinction between rural and urban house types. In some cases, the large, multistory structures of the periphery zones may reflect a need for defense in areas characterized by weak government and endemic warfare. According to Petherbridge (1978: 194): "Multi-storied houses of defensive aspect continue to be characteristic of the mountainous areas of western and southwestern Arabia and the Red Sea littoral" (as well as in Morocco, the Balkans, Afghanistan, and Pakistan) (p. 204). But I suggest that in part this pattern also reflects the use of urban-inspired built forms that embody society's most potent architectural rhetoric for the indexical expression of wealth and status. Wolfgang Korn (1976:

Table 4-2. Visibility of Facade (Percentages Rounded)

	0 (visible)	*1 (partially hidden)*	*2 (introverted)*	N
China	79	5	16	19
India	97	3	0	32
Nepal	73	20	7	15
Southwest Asia main	22	52	27	139
Southwest Asia other	83	11	6	71
Mesoamerica	41	44	15	27

19) writes of the houses of the Kathmandu Valley, Nepal: "This virtually complete similarity between architecture of the city and village, gives credence to reports that the Newars were inclined more towards trade and commerce and regarded agriculture as a necessary but secondary occupation" (Blair [1983: 46] makes a similar point about the "urban character" of rural Newar houses). Korn's logic is not impeccable, but his comment indicates an adoption of urban forms by trade-oriented rural villagers (cf. Schrader [1988: 109], concerning the Nepalese Byans and their houses; Lewcock [1976: 16] points to the similarity of urban and rural houses in North Yemen). But why would periphery households in particular tend to devote resources to decorative architectural expression? Next I turn to my community data to develop and evaluate a hypothesis that addresses this issue.

HOUSEHOLD ECONOMIC STRATEGIES AND INDEXICAL COMMUNICATION

During the course of coding houses and communities, I preliminarily concluded that there was some kind of connection between economic strategy related to commercial orientation and degree of decorative elaboration of house exteriors. I pursued this idea using the community data, as I had coded several variables related to prevailing types of household commercial strategies present within each community. Variable CA, commercialization of agriculture (Appendix 10), indicated whether agriculture was carried out primarily for subsistence farming (a value of 1), subsistence farming plus some marketed commodities when possible (2), or (3) a strong orientation to agricultural commodity production. I coded the latter variable for cases where roughly 50% or more of the annual crop is regularly marketed, for example, where one whole crop cycle each year is devoted to commodity production. I also coded for the number of kinds of commercial specialists (people involved in trading professions) noted by the ethnographer, when I could be reasonably certain this was a complete list of specializations (variable CS in Appendix 10). This was in lieu of the percentage of households engaged in specialist trading professions, which is rarely given in ethnographic sources. These were all the types of trading specializations recognized as such within their respective

communities (e.g., shopkeeper, grain merchant, long-distance trader), but they need not imply a total specialization because virtually all the households in the communities I coded engage in some agricultural production even when they are commercially diversified, including trading, craft production, and labor migration.

In addition, I coded for number of commercial central-place functions of each community (CP in Appendix 10), where 0 = none or minimal; 1 = market or shops present, but commercial status lower than a standard market; 2 = standard market (i.e., a local market that meets "all the normal trade needs of the peasant household" [Skinner 1963]); 3 = small town (i.e., higher in rank than a standard market). Last, in the overall commercialization variable (COMM in Appendix 10), I combined agricultural, craft commodity production, and market activities, including trading professions, in an overall estimation of each community's tendency to emphasize commerce as opposed to strategies that emphasize a more subsistence-oriented production. None of the communities was totally a subsistence economy; all had some degree of commercial orientation, but it was possible to dichotomize the sample into a group characterized by lesser commercialization ("0") or more commercialization ("1"), based on my knowledge of the range of variation present in the community data set.

The latter variable (COMM), which summarizes overall commercial orientation, has a very weak relationship to decorative elaboration (DEC) (Figure 4-16) (r-square = .14, p = .08). There is a slightly stronger correlation between number of central-place functions and decoration (Figure 4-17) (r-square = .19, p = .05), but the statistical significance of both of these correlations is due largely to CH01 (West Town, China), which is both highly commercialized and has a high value of decoration. When this case is eliminated, the correlation is no longer significant (p = .64). West Town has a similarly determinative effect on the correlation of number of commercial specialists by decoration (Figure 4-17) (r-squared = .34, p = .006). Again, when West Town is eliminated, r-squared = .02, p = .5. Thus I feel a general conclusion about the relationship between commercial specialists and decoration would be of dubious validity.

Insofar as my measures of commercial orientation are valid, I conclude that a commercialization hypothesis to explain decorative

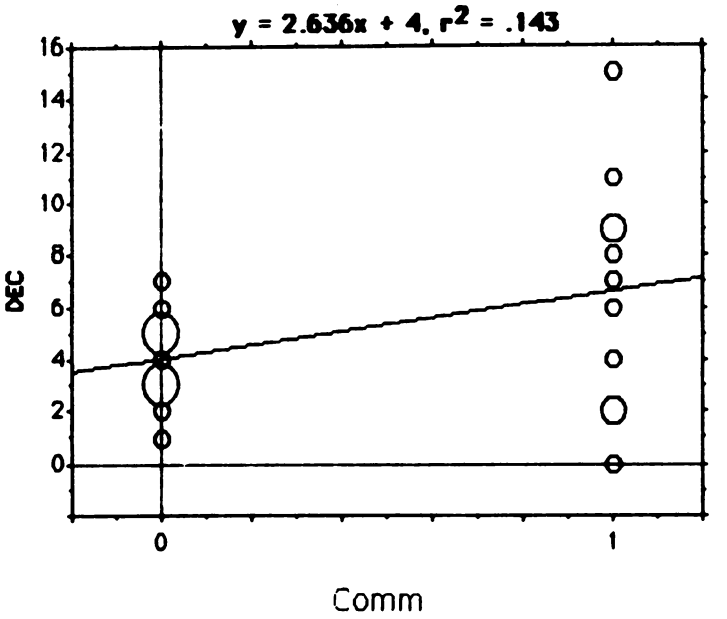


Figure 4-16. Commercial orientation (Comm) by external decoration (DEC), community sample.

elaboration is largely falsified. Obviously, some highly commercialized cases do not engage in decorative display (although some do, such as West Town). As I thought further, however, I realized that there is really no reason to have expected a relationship between measures of commercialization and decoration. I had assumed that commercialization would be associated with higher levels of income and wealth, and that, in turn, more elaborate display would be a consequence of wealth. But is there a reason to expect households to display wealth? I began to reformulate my hypothesis so that it would answer the question: Under what circumstances might households find it worthwhile to display wealth through decoration of the house? One possibility to consider is that indexical material display might be redundant in situations where information on relative prosperity is known through other channels of communication (e.g., Duncan and Duncan 1976b: 251–252; Wobst 1977). This would apply particularly in farming villages where most other households are likely to have knowledge of a family's land holdings and quality of land, access to irrigation water,

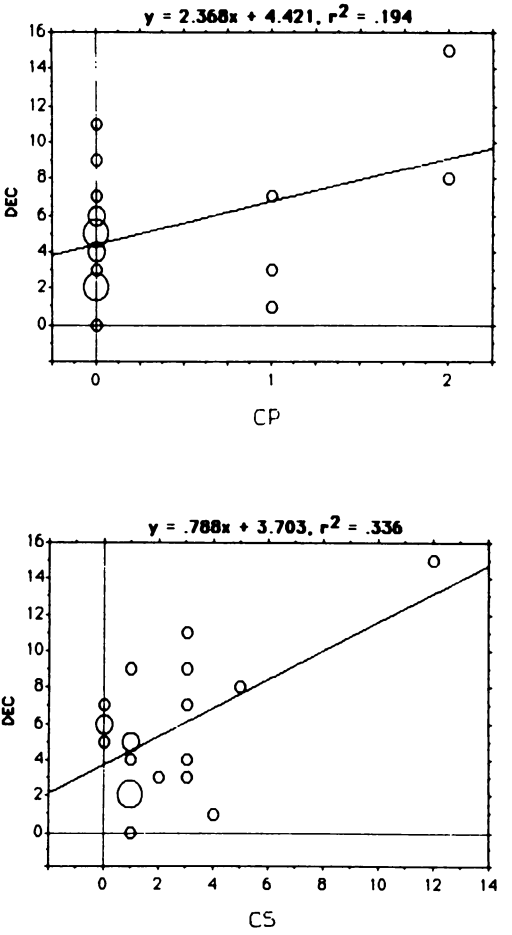


Figure 4-17. Number of central-place functions (CP) by external decoration (DEC) (upper); number of kinds of commercial specialists (CS) by external decoration (DEC) (lower), community sample.

dependency ratio (i.e., the ratio of productive to nonproductive labor in the household), number and quality of animals and implements, and so on. Kamp (1982: 352) noted this in her discussion of Darnaj, Syria (SWA06).

Even in a village like Tzintzuntzan (MS005), where pottery production for the market is a major occupation, "the relative economic status of each family is known by all others" (Foster 1948: 288). A

family's ability to produce pots would be well known by the size of its labor pool, and the market value of the utilitarian pottery normally produced in this village is also widely known. But where at least some families in a community earn income in a way that is not comprehensible in terms of this kind of local knowledge, then I would predict that indexical display would be a necessary strategy for households desiring to position themselves socially within the community. This situation might apply also where a household wants to communicate status in the context of a larger social orbit, beyond the boundaries of the local community, where local knowledge would not suffice in the interhousehold communication of wealth status (Duncan and Duncan 1976b). Either way, I would hypothesize that external sources of income would result in a situation of greater "status anxiety," in the phraseology of McCracken (1988: 13, passim), than would be found in communities where wealth rank is widely known (Cannon [1989: 443] expresses the same aspect of consumer behavior in the phrase *status uncertainty*). This consumer behavioral process may help explain situations where merchants have been found to spend more on consumer goods compared with farmers, who tend to invest proportionately more on agricultural capital (summarized in M. Smith 1987: 307).

To evaluate a status anxiety hypothesis, I found it necessary to go back through the community sources to code for the relative importance of sources of external income. I looked for evidence of long-distance trade as a major occupation, export of exotic commodities to distant markets, and/or export of labor to distant urban zones, as opposed to commerce primarily within the local market system. My variable "external orientation" (EXT in Appendix 10) simply dichotomizes these kinds of activities into a category indicating that most market transactions are localized (EXT = 0; $N = 13$) and a category indicating a significant external orientation present in the community (EXT = 1; $N = 9$), although local transactions are also found in all of the latter cases. I also dichotomized the sample according to the degree that households are described as pursuing a singular kind of economic activity (usually farming), versus a diversified economic strategy involving multiple production and marketing activities. This variable turned out to be highly redundant with my external orientation variable, so I did not pursue it in my analysis.

The results of the analysis lend support to the external orientation hypothesis. Figure 4-18 shows the scattergram of EXT by DEC (r-squared = .28, p = .01). From this figure it is clear that there is a general tendency for those communities with more of an external orientation to have higher values of external decoration, and the significance holds up even when CH01 (West Town) is eliminated from the sample (p = .03). The mean value for DEC for the group lacking external orientation is 3.9 (S.D. = 3), whereas the mean for the group with more emphasis on external economic transactions is 7.8 (S.D. = 3) (one-tailed t-test of differences of means, p = .006).

The hypothesized consumer behavioral process, in which external sources of income result in status anxiety and a need for social communication through indexical material display, could account for several comments in the ethnographic sources indicating that income earned outside the community tends to be spent on consumer goods, including houses, rather than being invested in land or other factors of production (Kamp 1982: 333). Pignède (1966: 84), describing the

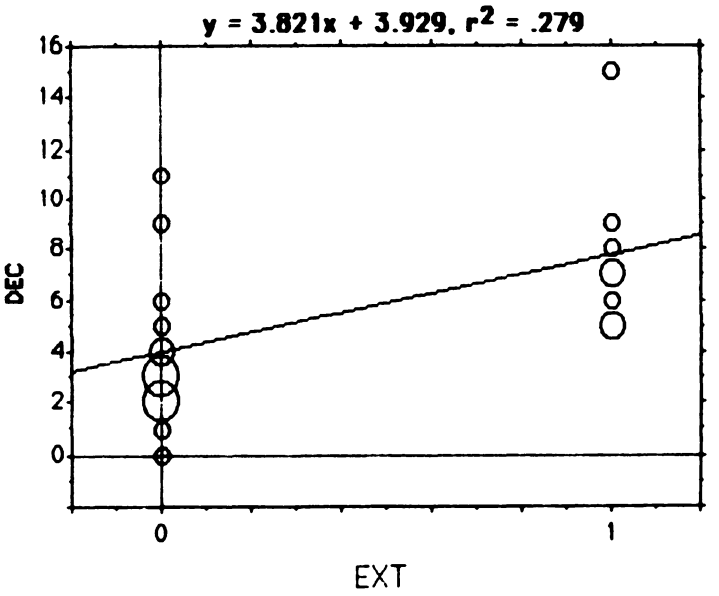


Figure 4-18. External economic orientation (EXT) by external decoration (DEC), community sample.

Gurung (SA03), says that the grandest houses represent a "nouvelle richesse" who made money serving as soldiers in India and Malaysia. MacFarlane (1976: 96) describes the propensity among the Gurung to spend outside earnings on consumer goods rather than on agricultural investment.

It is of interest to note two prominent residuals among the communities with primarily local economic orientations, Taitou, China (CH04) (DEC = 9) and Khanh-Hau, Vietnam (SEA02) (DEC = 11). Both have primarily local economic orientations but, obviously, rather elaborate external decoration of houses (Figure 4-19). Why are they so showy, in violation of the status anxiety hypothesis? Perhaps the houses of Taitou reflect the importance of the Han architectural style (as would derivative styles, including Vietnamese houses) that demands a certain degree of decorative elaboration of the house irrespective of communicative process.

Another possibility is that the external orientations of these two communities relate to marriage arrangements rather than with market transactions. Taitou emphasizes village exogamy, and Khanh-Hau is a large community (3,241 people) consisting of exogamous hamlets. However, in general this variable is largely unrelated to decoration. I coded for degree of village exogamy (the variable MARR in Appendix

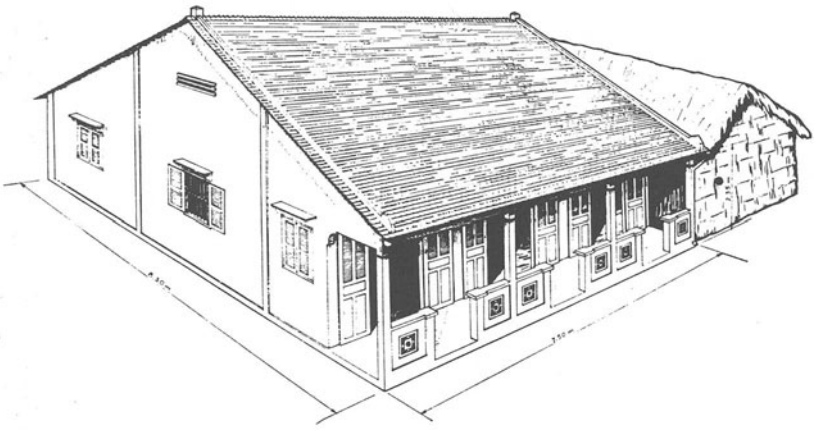


Figure 4-19. SEA007, costly house from Khanh-Hau village, Vietnam (SEA02), from Hickey (1964: Figure 13). Reproduced with permission of Yale University Press. Copyright Yale University Press.

7), but the correlation of this variable with external decoration is low (r-squared = .17, p = .12).

Another feature of both villages is that they score very low on my measures of community integration; this should imply relatively autonomous households (both strongly emphasize the household continuity strategy). This brings me back to the social boundary hypothesis, and suggests that perhaps both processes, indexical communication and social boundaries, could contribute independently to the variation in external decoration. A multiple regression involving community integration (INT) and external orientation (EXT) (with external decoration, DEC, as the dependent variable) does in fact show the two variables operating somewhat independently, together accounting for more variance in external decoration (r-squared = .5, p = .006) than either of the two variables counted separately. I conclude that external decoration of houses is a complex variable that is related both to indexical communication, by way of status anxiety, and to a lesser extent, to social boundedness.

Beyond social boundedness and status anxiety, other factors may influence the propensity toward material display. In the next chapter and conclusion, I carry this discussion further by evaluating the concept of the "closed" community as formulated by Eric Wolf (1955, 1957) in his discussion of types of Latin American peasants. In closed communities, wealth is not openly displayed materially (cf. Wilk 1989), due, supposedly, to a prevalent cognitive model of shared poverty and equality. This theory implied that variation in the degree of material display is not the outcome of household-based decisions (like those I have discussed in this chapter), but the consequence of communal values and norms that would constrain household choice.

Chapter 5

A Macroregional Approach

As I conducted my analyses of the house and community data, I noticed what appeared to be regionally based patterning in the data, in which spatial positioning in regional systems of cores and peripheries seemed related to housing decisions. Specifically, differences often existed between housing traditions in villages involved primarily in agricultural commodity production for local markets in the rural areas of core zones, versus those in transitional and edge zones (peripheries), where activities like long-distance trading expeditions were equally important to household economies. My previous research experience suggested that regional factors could, in fact, have an influence on households and their decisions about housing, but I would require a regionally based method in order to evaluate such a proposal.

One way to explore variation of this type would involve looking at household economic adaptations within the context of what G. William Skinner (1977a) refers to as "macroregions," or in the context of interactions between macroregions. The macroregions Skinner (1977a,b) describes for agrarian China of Late Imperial times are "nodal regions," meaning they are not uniform economic regions but rather are characterized by a division of labor between their various spatial sectors. It is this division of labor and the attendant flows of goods and services that, in large part, make them conceptually isolable regional entities. A major subregional differentiation within Chinese macroregions is found in the distinction between the densely popu-

lated and intensively cultivated rural cores, where households are extensively involved in local market transactions on the one hand, versus the locationally more marginal, usually topographically more complex, peripheries on the other hand. In the latter, transport costs are higher, and transport networks weakly developed, inhibiting full commercialization (Skinner 1977b: 283–288). The simple dichotomy of core and periphery is adopted for my analysis, given the absence of more detailed information on specific features of regional variation in the cases I utilize, but finer structural distinctions can often be found in particular macroregions, as is indicated, for example, in Carol Smith's analysis of central-place types in Western Guatemala (Smith 1976a).

CORES AND PERIPHERIES IN MACROREGIONS

In the following, I outline the major factors likely to influence household economic strategies in the rural cores and peripheries of macroregions in agrarian civilizations, taking off from Skinner's discussion, but augmenting it with additional sources and information I gleaned while coding my community data. This should be regarded as a provisional discussion of this complex topic, which has not as yet been subject to adequate comparative research in economic anthropology. In rural cores, households have access to comparatively densely packed "interlocking" market networks that make available closely spaced, multiple marketing destinations; this maximizes choice for all households (e.g., Smith 1976b,c). Although wealth differences within and between villages may exist, all households have more or less equal access to market destinations if they choose to produce for market sale. Due to low transport costs (Skinner 1977b: 283) and other factors, including state policies in some cases (cf. Blanton 1985), most rural core commodity production consists of frequently consumed, bulky, low-order goods (especially basic grains, vegetables, milk, low-order craft goods, etc.) of the same type frequently consumed by the producer family itself. In peripheries, commodity production includes, more commonly, less bulky, high-value exotic ("high-order") goods that can be transported economically from periphery producers to distant urban consumers, in addition to the production of frequently

consumed agricultural and craft goods (much of which, due to poor local demand and poor market development, is for household consumption alone). Additionally, periphery households may be involved in the production, largely for export, of goods peculiar to periphery environments, such as wood products not available in deforested cores.

Periphery market structure is less well developed (i.e., less of the interlocking pattern that allows maximum choice and full commercialization), and marketing destinations are more distantly spaced, meaning that some households may have better access to markets than others; thus the potential for monopoly control and uneven participation in market transactions is higher (cf. Carol Smith 1976b,c). Long-distance trading, connecting periphery to core, or along routes that link adjacent macroregions, is another activity more likely to be found among periphery households. It is of interest to note that the Nepalese Gurung (SA03), clearly a periphery group, substituted labor export to distant cores for long-distance trading after the Chinese closed the Tibetan border (MacFarlane 1976: 26). Labor migration may be a common periphery adaptation (Smith 1976b: 347; cf. Nubia as described in Fernea 1973: 17 and in Scudder 1966), perhaps due to the comparatively poor returns to labor in the less-commercialized periphery regions. Either way, periphery households are more likely to be engaged in a diversified household strategy, and an external orientation, involving, in some cases, long absences on the part of some household members, which might bring about scheduling conflicts with day-to-day agricultural and other activities.

These varying economic strategies predicated on the structural differentiation of nodal regions seemed to me potentially pertinent to features of variation in household strategies and houses I treated in previous chapters. One of the major features of differentiation along these lines is related to what I call *external orientation*, which previously was found to influence the degree of indexical communication through the medium of external decoration of houses. Following the argument of Pasternak, Ember, and Ember (1976), a diversification of household activities that results in scheduling conflicts, including long-distance trading and migratory labor, produces conditions favoring extended family households (cf. Wilk 1984, 1989; Wilk and Rathje 1982; Wolf 1966: 65). By extension, it is reasonable to expect that this

might be related to my variable treated previously that I call household social reproductive strategy. Thus I decided to evaluate the efficacy of a macroregionally based theory as a unifying theory of households and consumer behavior related to houses.

AN EVALUATION OF A MACROREGIONAL THEORY

Unfortunately, there are many methodological barriers standing in the way of an evaluation of a macroregional theory. Ideally, hypothesis testing would be predicated on the use of community and household data that had been collected with macroregionally based research designs in mind. But not one of the community ethnographies included within my sample was based on this kind of research design, nor had I selected my cases for comparative study in terms of nodal region structure; this would have been impossible anyway, given the small number of cases suitable for coding. An additional problem has to do with the nature of macroregions themselves. Although I do not doubt the existence of macroregional organization in other world areas, it is not clear that the model developed by Skinner for Late Imperial china is one that will be found to be highly applicable elsewhere, as I am sure he would be the first to point out. The Chinese macroregions are all natural physiographic zones whose boundaries are largely defined by watersheds (Skinner 1977a: 212), and within which there is a sharp distinction between the more mountainous peripheries and the cores that are alluvial plains; his type of analysis might not apply where there is a less clearly differentiated physiographic structure. And, in the Skinnerian model, linkages between households as producers and consumers take place largely through commercial networks, but in my sample of communities, goods moved variously through market as well as governmental and other channels. Among the areas included in this study, Southwest Asia, and to some degree South Asia, are unique in the degree to which linkages between rural households and urban cores were mediated by landlords primarily, and markets only secondarily, that is, where rural households were tenants (most notably Hasanabad [SWA03], Topzawa [SWA05], and Tell Ṭoqaan [SWA08], and others had a history of landlordism until recent land reforms, including SA01 [Sivertsen 1963: 16–18] and

SA02 [Eglar 1960: 42]). Arguably, linkages of this noncommercial sort might produce a pattern of macroregional division of labor and attendant variation in household strategies unlike those Skinner describes for China.

Because I lacked information on specific aspects of macroregional structure in the areas studied and on the macroregional settings of the communities in my sample, I set out to classify each community as to core or periphery orientation based on the factors discussed above, related to market structure and access to market localities, types of commodities produced, long-distance trade, and labor migration. Thus to compare core/periphery differences, I decontextualized the specific aspects of the macroregional setting of each community, which cannot be determined with any accuracy from the ethnographic reports, and proceeded on the assumption that cores and peripheries everywhere have features in common, as described above. Methodological and conceptual difficulties encountered in applying this method of decontextualization made this less than a clear-cut exercise, and I regard this as a provisional exploration of this kind of analysis.

Below I list the communities according to my classification, to which I have appended comments for clarification in some cases. Given the difficulties of classification, I divide core and periphery into two groups each. In Appendix 8 and Table 5-1, "Periphery 1" are those most easily classifiable as periphery communities, whereas "Periphery 2" are either less clearly classifiable or are found in areas that at the time studied were undergoing a transition from peripheral status to core status, as corelike market systems expanded into previously marginal regions. My distinction between "Core 1" and "Core 2" is a distinction between obvious rural core villages (Core 1) and the Southwest Asian cases (Core 2) described above, in which linkages to urban centers take place via landlords primarily, and through markets only secondarily (these three are excluded in all analyses below). Most of the "Core 1" group are simply listed without comment. These are all clearly cases where the main economic strategy involves the production of low-order commodities for sale in local markets of the interlocking type. In some cases, these communities are located in peripheral areas, for example, Chan Kom, Yucatan, and Zinacantan, Chiapas. Both of these states are marginal in the Mexican

Table 5-1. Classification of Communities

	Periphery 1
West Town CH01	Long-distance trading on Burma Road. Export of high-value commodity for urban consumption (opium).
Mohoriya, Nepal SA03	Had been long-distance traders, now exports labor to distant urban markets.
Alişar, Turkey SWA07	Export of valuable mohair wool among other commodities. Nearest rail-head for commodity export is several days round-trip.
Gilân, Iran SWA09	Long-distance trading, export of high-value goods for distant urban markets, including silk, tobacco, tea, and caviar.
Cherán MS003	Export of forest products. *Arriero* traders engage in long-distance expeditions. Poor local market development.
	Periphery 2
Kao Yao CH03	Appears to be along the edge of a rural core zone centered on Kunming. Serves as a gateway linking that core with partially sinicized periphery villages in the mountains to the west; has trading, storage, break-of-bulk, and portering activities.
Yen-liao CH05	Production of tobacco an important source of income, sold through government-mediated channels.
Chiangmai SEA01	This is an area that appears to be undergoing transition from periphery to core but retains export of high-order commodities destined for Bangkok markets, especially the lamjaj fruit. Long-distance trading was more important in the past.
Aliabad SWA04	Poor connection to local markets; labor is probably the major export.
Darnaj SWA06	This area is increasingly connected to local markets and may already be close to core status, but labor export is an important source of income.
Tajin MS004	Export of valuable commodity primarily for urban consumption (vanilla); poor local market development.
	Core 1
Tamansari IP01, Niiike IP02, Kaihsienkung CH02, Taitou CH04, Thyagasamuthiram SA01, Mohla SA02, Hasanoğlan SWA01, Zinacantan MS001, Chan Kom MS002, Tzintzuntzan MS002. Khanh-Hau (SEA02) is situated within a developing core region of the Mekong Delta but is located in a larger southern Vietnamese region (Cochinchina) that was colonized comparatively recently by Vietnamese, and that, as a whole, can be regarded as peripheral to the more traditional core of Vietnamese society to the north, in the Red River Delta (Popkin 1979; Rambo 1973, 1977). Baghestan (SWA02) was also difficult to classify but was included in this group. Although the community is in a poorly commercialized region, most market transactions seem to involve low-order goods. Kaihsienkung (CH02) was classified as a core community, even though it has a recent history of production of raw silk (a high-order good destined primarily for consumption in distant cities). But since the decline of this industry locally (Fei 1939: 16–17), the main economic focus is rice production for local market sales.	

nation as a whole. Nonetheless, within even marginal macroregions there are rural cores characterized by the common type of low-order commodity production for local markets (in these cases, mostly corn) that characterizes both villages.

The fact that many of the communities studied here have recently experienced change, in which some previously periphery communities were transformed to core status through the growth of markets and expanded road networks, is another issue that must be kept in mind in this kind of analysis. If change has occurred recently, periphery household adaptations may persist in spite of the changing nature of links to outside markets, confusing my attempts to conduct analysis in terms of core and periphery categorizations.

"CLOSED" AND "OPEN" COMMUNITIES

To a degree, this macroregional formulation will restate many of the features of the "closed" versus "open" dichotomy developed by Eric Wolf (1955, 1957, 1986; cf. Popkin 1979), in his classification of Latin American peasant communities that has so fruitfully informed the anthropological discourse on peasants. According to his formulation, the closed communities in what had been the core areas of the Spanish Colonial empire display a heightened degree of corporate structure, which "inhibited direct contact between the individual and the outside world" (1955: 456). Open communities were found in the tropical lowlands and emphasized the export of cash crop production for world markets (and would thus fit into the macroregional concept of periphery); here private ownership of land and a fluctuating economy produce a more fluid social situation emphasizing individual decision making and display of wealth, as opposed to the more corporate control over household decisions in the closed communities.

Although many of the specific features of the Latin American closed communities (including corporate jurisdiction over the free disposal of land) are specific outcomes of Spanish Colonial policy (Wolf 1955, 1957, 1986), and thus not necessarily found elsewhere, I thought that my more generally applicable measure of community integration (the variable INT, based on interhousehold material exchanges, communal burial, and communal ritual; Appendix 10) might

mirror the varying degrees of corporateness in Wolf's categorization. But for the community sample as a whole, there is no statistical association between core and periphery statuses and community integration measured in this way (Table 5-2). Highly developed community integration is largely a Mesoamerican phenomenon (for both core and periphery communities). And there is only a slight association between core and periphery and my variable that assesses the presence or absence of emic concepts of shared poverty or equality (PE in Appendix 8) (Table 5-3).

As can be seen in Table 5-3, there are few communities in my sample that display a strong sense of shared poverty. All of the communities showing a strong tendency toward an emic concept of shared poverty are core communities, but half of all the core communities have no expression of this kind of sentiment. This is an interesting result because one of the main themes of the peasant community literature has traditionally been the idea of "homogeneity theory," following Cancian's (1989: 133) terminology. As expressed by this framework (e.g., Foster 1965), peasant communities are seen to emphasize "moral economy" concepts of shared poverty and "institutions that resemble what we might call enforced philanthropy" (Cancian 1989; Popkin 1979).

Another way to approach the closed versus open dichotomy is to look at the degree to which economic status differences in each community are clearly reflected in house variation. When we think of "closed" communities (presumably similar to my core communities), we think of communities where wealth differences are not expressed materially (e.g., Wilk's [1989] southern Kekchi Maya, where houses show little variation, reflecting a cognitive model of equality). To get at the emic concepts of differentiation, I looked at whether and how wealth differences could be expressed materially through houses. In some cases, house type is an important indicator of wealth status. By

Table 5-2. *T*-Test Differences of Means of Community Integration (INT) by Core and Periphery Status

Core	$N = 14$	Mean of INT = 3.3
Periphery	$N = 7$	Mean of INT = 3.4
	$p = .42$	

Table 5-3. Emic Concept of Shared Poverty or Equality (PE from Appendix 8), by Core and Periphery Status

	Core	*Periphery*
No concept of shared poverty/equality	7	7
Some expression of shared poverty/equality	3	2
Idea of shared poverty/equality important	4	0

house types I mean native cognitive categories that recognize variation in houses indicating socioeconomic differences between households, expressed in terms of types of houses (e.g., in India, the often-expressed distinction between *kacca* [mud-brick] and *pakka* [fried-brick] houses). In other cases, wealth variation can be expressed materially, but in terms of variation along a continuum rather than in terms of types. In Niiike, for example, and in rural Japan generally, differences between houses are quickly summed up by reference to size expressed in numbers of *tatami* mats that cover the floors of the living and sleeping rooms (Beardsley, Hall, and Ward 1959: 82–83) (Figure 5-1). In other cases, little or no variation in houses is cognized.

Table 5-4 shows the frequency of three categories (little or no expression of socioeconomic variation by house type, house types cognized, and house variation cognized, but not in terms of types of houses) by core and periphery status. The three categories are not strongly segregated by core and periphery. Core communities actually have more cases where socioeconomic status differences are manifested by differences in types of houses. The number of house types cognized does not vary at all between the core and periphery villages (Table 5-5). Viewed comparatively, the degree of actual variability in houses within communities is not well mapped by the cognitive models of variation. In Zinacantan (MS001), for example, the costly houses are not substantially larger or more spatially complex than the basic houses, but a distinct typology of houses is found, reflecting mostly building materials (Figure 5-2). By contrast, in West Town (CH01), where substantial differences are found in scale, integration, and complexity, only one house type is recognized. According to Hsu (1949: 41): "between the houses of the . . . poor and the . . . rich there is no definite demarcation. Gradual gradations lead from one to the other."

I also looked at the presence or absence of restrictions regarding

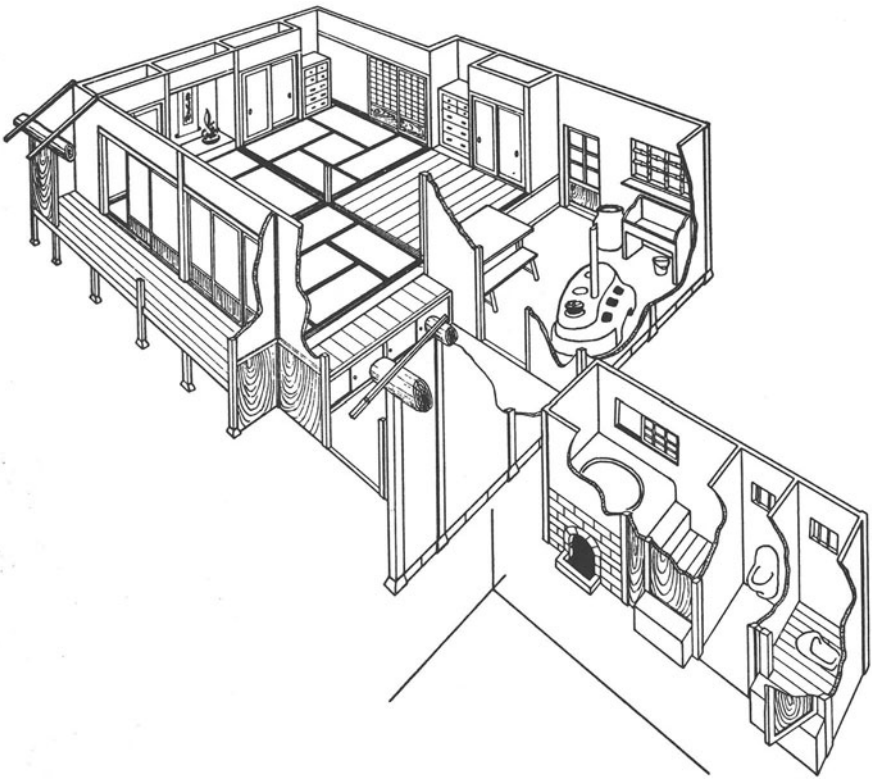


Figure 5-1. IP02, Niiike, Japan, cutaway perspective of typical house, showing *tatami* mats on the floor of the main living rooms. From Beardsley, Hall, and Ward (1959: Figure 15). Reproduced with permission of the University of Chicago Press. Copyright 1959 by the University of Chicago.

house form and decoration that would minimize house variation. Of the 16 cases where I was able to code for this variable, only 2 cases describe such restrictions (variable HR in Appendix 8). Both are in core communities (Table 5-6). But 6 out of 14 communities lacking restrictions are core communities. One of the cases where restrictions

Table 5-4. Cognization of House Variation by Core and Periphery

	Core	*Periphery*
Little or no expression of variation by house type	2	1
House types cognized	5	3
House variation cognized but not as types	5	6

Table 5-5. Mean Number of Emically Identified House Types, by Core and Periphery Status (NT in Appendix 8)

Core	1.82	$N = 11$
Periphery	1.8	$N = 10$

$P = .48$ (One-tailed t-test of difference of means)

are applied to house form is the strongly stratified Hindu village of Thyagasamuthiram (SA01), where only Brahmin houses are built following the strict dictates of the Vedic Shastras. The other example is Niiike, Japan (IP02), where restrictions are probably better thought of as restraint; according to Beardsley, Hall, and Ward (1959: 77):

> To show respect for one's house—an important symbol of a stable and enduring family—one is expected to keep it neat and in perfect repair but is in no wise required to ornament it. Thus, subdued hues and a minimum of decoration give an air of restraint to the buildings of the community.

I conclude that although in some respects my core communities are like the closed communities conceptualized by Wolf, there are some features of his particular conceptualization that do not apply uniformly to my category of core communities. Although there is less tendency to communicate indexically in the core communities (see below), this appears to be an outcome of household strategies linked to processes such as status anxiety that I discussed in Chapter 4, rather than to community-based cognitive models of shared poverty or restrictions on the open display of wealth through material channels, including the house. I return to this issue in my concluding comments.

CORE VERSUS PERIPHERY HOUSES AND HOUSEHOLDS

As expected, because periphery communities were coded in a manner similar to my earlier variable "external orientation" (Chapter 4), there is a causal relationship between periphery status and house external decoration (DEC) (Table 5-7), although it is significant only at the .1 level (this significance level changes to .05, however, when I consider only my "Periphery 1" communities, even when I exclude West

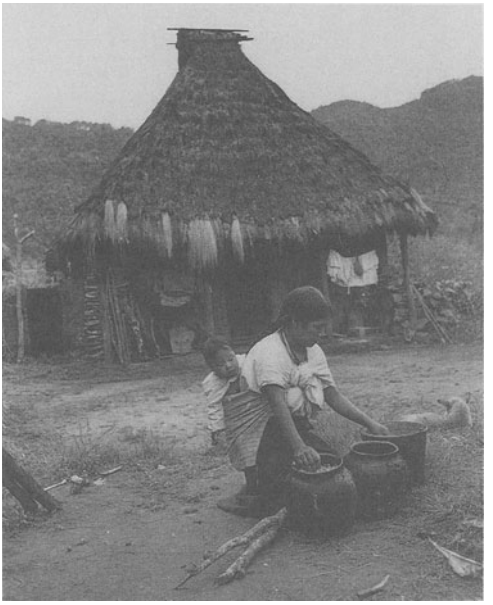


Figure 5-2. Zinacantan, Chiapas, Mexico (MS001), showing two house types. Top, "Chukal Na" (thatch roof, wattle-and-daub walls); bottom, Ladino style (tile roof, adobe walls). Top photograph is courtesy of Frank Cancian and is from Vogt (1969: Figure 21). Reprinted with permission of Evon Z. Vogt and Harvard University Press. Copyright © 1969 by the President and Fellows of Harvard College. Bottom photograph courtesy of Frank Cancian.

Table 5-6. Presence or Absence of Restrictions on House Form, by Core and Periphery Status

	Core	*Periphery*
Presence of restrictions on house form or decoration	2	0
No restrictions on house form or decoration	6	8

Town from the analysis). But periphery status is more than simply a reiteration of the external orientation variable, because it considers type of commodity produced and the structure and density of local market systems as well as external orientation. Some of these market structure factors, discussed below, may account for an interesting result that came out of this analysis. Figure 5-3 summarizes the statistics on scale, integration, and complexity of core and periphery houses, described in terms of the differences between "basic" houses and what I call "costly" houses in each community. Recall from my previous discussion that a basic house is an ideal type (sometimes, but not always, coded from an actual house) that describes a minimal house, but one that within its respective community would be regarded as an acceptable house for a poor family. The costly house category is also an ideal type but characterizes the main features of the most elaborate house to be found in that community. From the figure, it is evident that in periphery communities, a greater differentiation is found between basic and costly houses than is seen in the core communities. Is this related to periphery status?

Given the comparatively limited transport development and poorer access to markets, it is reasonable to expect periphery households to be relatively economically disadvantaged by comparison with core communities. Although there are difficulties in the assessment of comparative economic advantage based on houses, the statistics summa-

Table 5-7. Summary Statistics and *T*-Test of Difference of Means, for External Decoration (DEC), by Core and Periphery Status, Community Sample

	Mean	*S.D.*	N
Core	4.3	3.5	9
Periphery	6.6	3.9	10
One-tailed *t*-test for difference of means, $p = .1$			

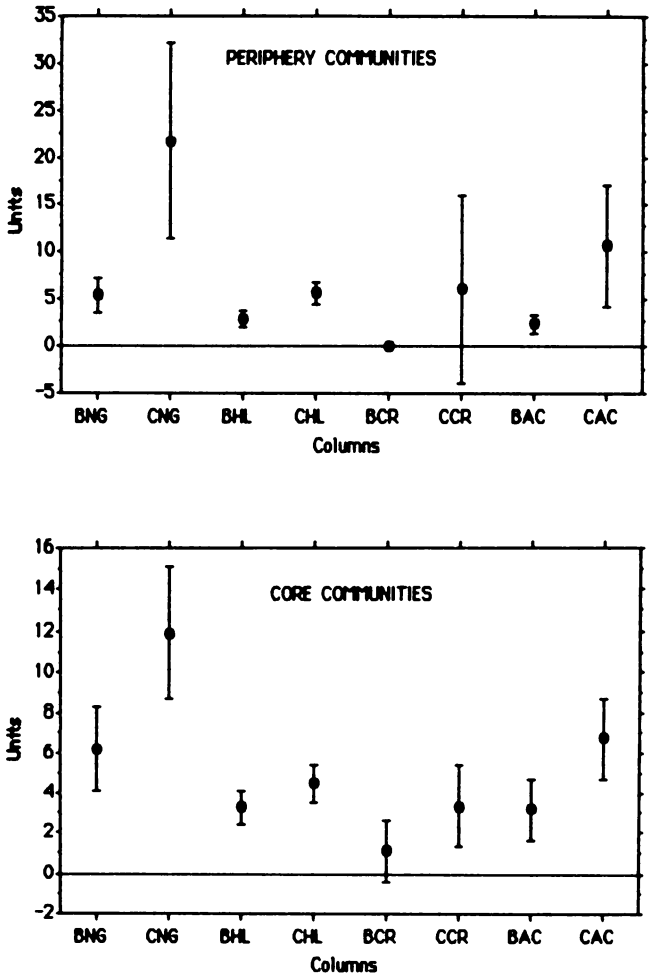


Figure 5-3. Values of mean and 95% error bars for scale, integration, and complexity of "basic" (B) and "costly" (C) houses in periphery communities (upper) and core communities (lower), where NG = number of nodes, HL = number of hierarchical levels, CR = number of circuits, AC = number of accessibility ranks from the path matrices. From the community sample, Appendix 8.

rized in Table 5-8 confirm this possibility, at least in terms of poorer families. Basic houses from periphery communities are on average somewhat smaller, less integrated, and less complex than their counterparts in the core villages. None of the differences is significant at the .05 level (based on a one-tailed *t*-test of differences of means), but there is consistency in a pattern that can be seen in all four measures.

Table 5-8. Mean Values for Scale, Integration, and Complexity of Core and Periphery Houses, Community Sample, Where B = Basic House, C = Costly House, NG = Nodes in Graph, HL = Number of Hierarchical Levels, CR = Number of Circuits, AC = Number of Accessibility Ranks (from Appendix 8)

	Core	*Periphery*
BNG	6.2	5.4
BHL	3.3	2.8
BCR	1.1	0.
BAC	3.2	2.1
CNG	11.9	22.7
CHL	4.5	5.8
CCR	3.3	6.9
CAC	6.7	11.2

One possibility is that the variation between groups reflects differences in the number of residents per house, rather than in material standard of living. Although I lack sufficient data to compare specifically the average numbers of residents in basic houses in the two types of communities, the figures on average household size by community suggests that periphery households are actually larger than those in core households (core = 5.05, periphery = 8.371; without CH05, a periphery community with exceptionally large households, the average is 6.32), a difference that is statistically significant at the .05 level (and that is still significant even when I exclude CH05). The between-group differences in average household size, however, could be due to the influence of a minority of exceptionally large, multifamily households in periphery communities, but variance in household size is presented too infrequently in my ethnographic sources to evaluate this possibility.

"Costly" houses in the periphery communities tend to be larger, more integrated, and more spatially complex than their counterparts in the core communities (Table 5-8). Because the number of basic houses in these communities is always greater than the number of costly houses, I interpret this to mean that, overall, periphery households may be materially disadvantaged relative to core households, but that within periphery communities there are some households residing in exceptionally large and complex dwellings. Among the houses coded in my sample, several of this type are the elaborate dwellings of a rural periphery elite, including "Y" house (CH004) from West Town (Figure 3-3), and the house of Memet Efendi in Alişar (SWA148) (Figure 5-4). Even though it has a thatched roof, the costly

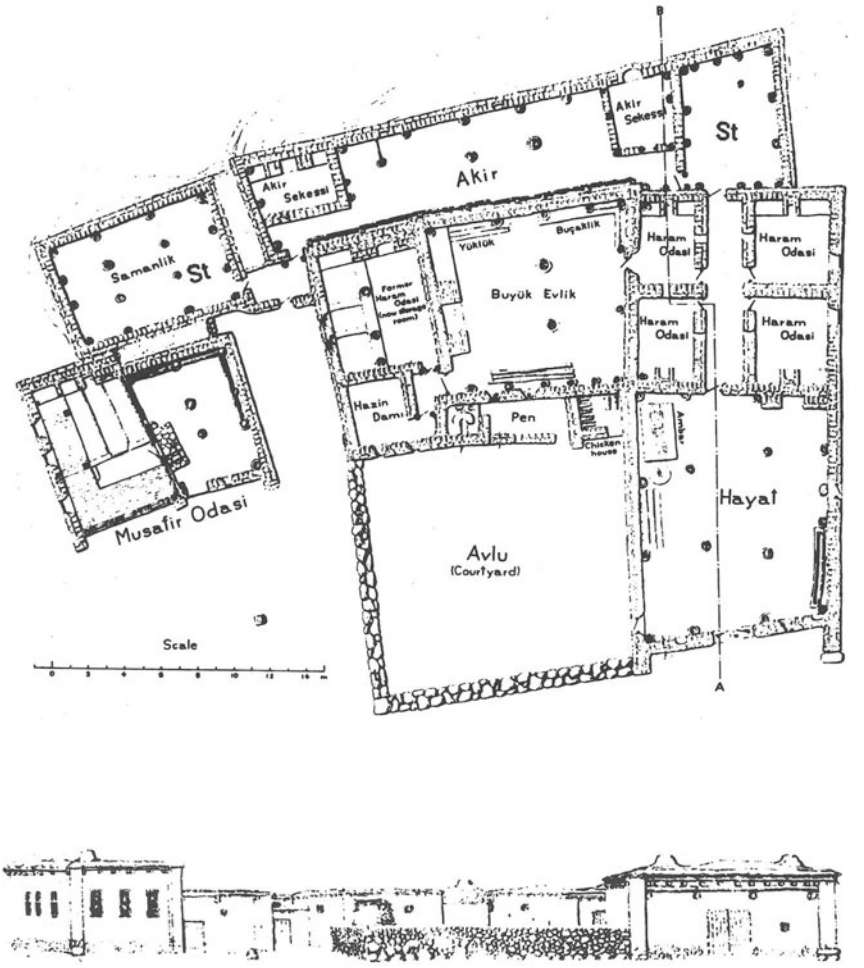


Figure 5-4. SWA148, the dwelling complex of Memet Efendi, Alişar, Turkey (SWA07), modified from Morrison (1939: Figure 52). Hayat = storage, temporary stable, and summer food preparation; Haram odasi = sleeping; Buyük Evlik = living room, storage, children's sleeping, food preparation; Musafir Odasi = guest quarters and stable; Akir = stables; St = storage.

house from the Gilân region of Iran (based on SWA218), described by Bromberger (1986: 54) as the house of a "riche exploitant de Sadeh," is quite large, with 18 nodes, 6 hierarchical levels, and 12 accessibility ranks (Figure 5-5). The costly Gurung houses described by Pignède (1966: Figure 8, SA047), although large and impressively decorated

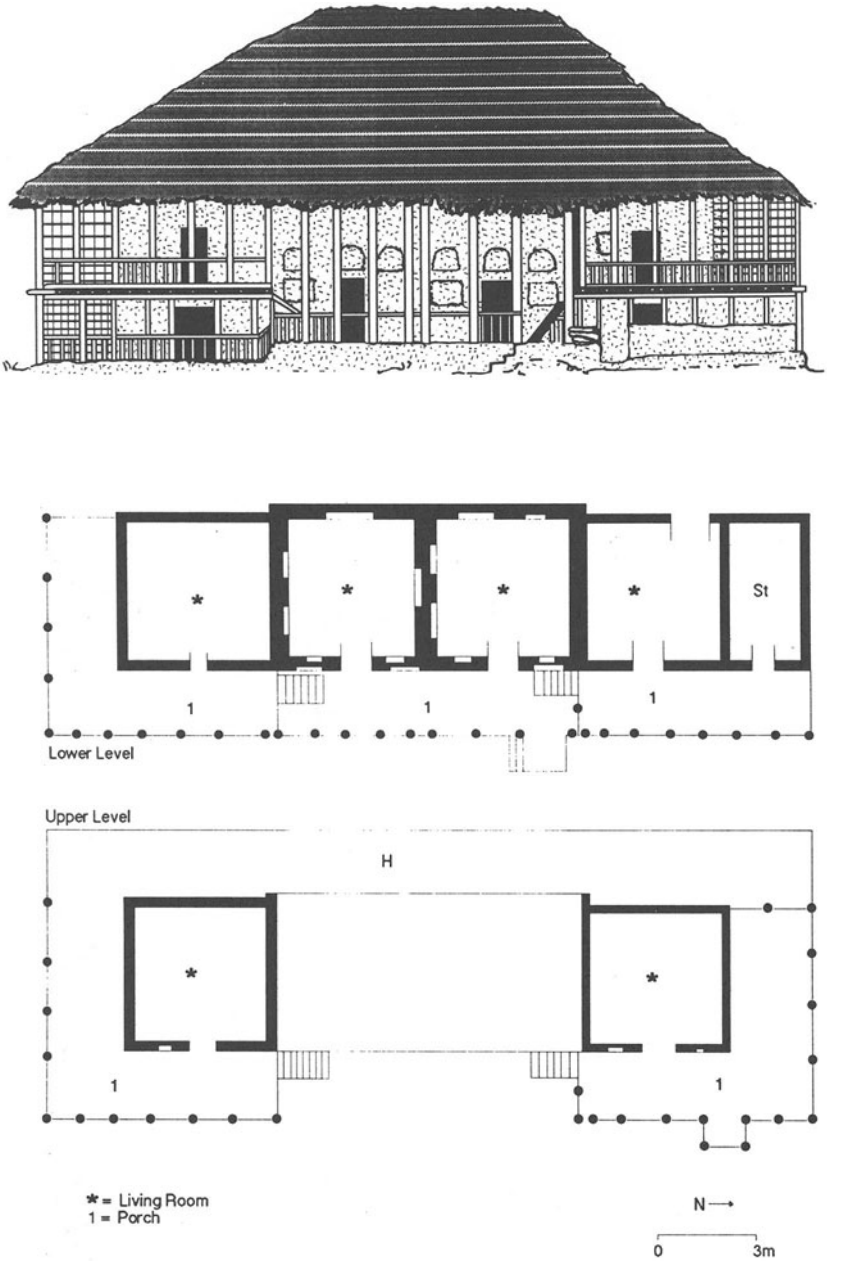


Figure 5-5. SWA218, Gilân Plain, Iran (SWA09).
Modified from Bromberger (1986: Figures 5g and 13g).

by comparison with the local "basic" houses (SWA046) (Figure 5-6), are actually relatively small and simple in contrast with some other Himalayan rural dwellings of undoubtedly periphery status, including several in my sample from the Thak region, Nepal (SA009, SA040), the Newar region, Nepal (SA045), and Ladakh, India (SA041) (Figures 2-19 and 4-3). Analogous periphery houses in my sample include several very impressive dwellings from northern Thailand (Figure 2-22), Nubia (SWA149, 150, and 152, although others are nearly as large and decorated) (Figure 3-10), and Yemen (SWA163, 165, and 166) (Figure 2-20).

In general, all Mesoamerican houses are small and less complex than those from other world areas, and there is comparatively little in the way of intracommunity variation, but the costly house of Cherán (MS003), which I classified as a periphery community, coded from the information in Beals, Carrasco, and McCorkle (1944), is the largest

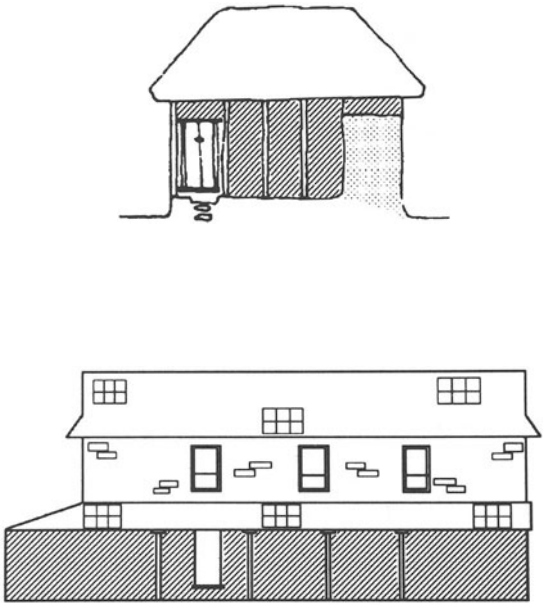


Figure 5-6. SA005, example of basic Gurung house (upper); SA006, example of costly Gurung house (lower). Modified from Milliet-Mondon (1982: Figures 9 and 11). Symbols used on costly house indicate slate roofs, stone walls (upper), wood panels on lower walls; basic house has a thatch roof with wood and mud walls.

"costly" house in my Mesoamerican data (in terms of numbers of nodes). Beals (1946: 12) describes the decline of several wealthy families in the community following the Revolution of 1910; perhaps Cherán was a more typically differentiated periphery community prior to that time. He also reports (1946: 86) that village families have had more tendency to mask wealth since the revolutionary period. The only other house of comparable size and complexity is the costly house from the strongly stratified mestizo (Europeanized) village of Tzintzuntzan (MS005), a "core" community.

COMMENTS ON CORE–PERIPHERY DISTINCTIONS IN THE HOUSE DATA SET

I can only speculate as to the degree that core–periphery differences account for the regional differences in scale, complexity, and integration found in the house data set, summarized in Chapter 2, because the social and regional settings of these houses are in many cases poorly understood. The distinction that can be made between the Himalayan ("Nepal") cases, and the Indian and Sri Lankan houses, in part reflects a difference in general between core (India and Sri Lanka) and periphery statuses (Himalayan). The same conclusions could be suggested as a basis for understanding some aspects of the difference between the Southwest Asian "other" and Southwest Asian "main" categories, although the differences between these two groups no doubt reflect a more complex situation than this simple dichotomy suggests, including the existence of the landlord–tenant pattern previously mentioned. Two of the "main" series communities were categorized as having partial periphery status, Aliabad (SWA04) and Darnaj (SWA06).

My Southwest Asian "other" category was devised based on the distinction I encountered between the common flat-roofed (or domed), mud-brick house compounds found primarily in Syria, Iran, and Iraq (but extending in a band eastward to India) on the one hand (the main series), and various local stylistic traditions distinct from this main series on the other hand. The "other" category is a diverse group of houses and was not devised originally as a periphery category per se,

although some of the houses found in it are from areas that would likely be assigned peripheral status, such as Nubia.

Although normally I cannot be assured of the core–periphery statuses of houses coded in the house data because there is normally little information available on community or regional contexts, there is likely a justifiable core–periphery distinction to be made within one group of the "other" category, namely those houses from the Nile Valley. Here I will distinguish between those houses from a rural core zone of Lower and Middle Egypt, versus a peripheral Upper Egypt, including Nubia (I base this largely on comments in Fernea 1973). Neither group can be considered a statistically representative sample of their respective regional populations, but these are relatively large samples that include within them a range from houses of the poor to those of a rural elite. I include in the core group houses described in Shafie (1989; SWA181–187) and Lozach and Hug (1930; SWA205–211). Periphery cases include those coded from Jaritz (1973; SWA149–161), Crary (1949; SWA175), Shafie (1989; SWA188–192), and Lozach and Hug (1930; SWA212–215). Table 5-9 indicates the differences between the two populations expressed in terms of mean and standard deviation of nodes (NG), hierarchical levels (HL), circuits (CR), access ranks (AC), and the specialization index (SI).

According to all of these five measures, periphery houses, on average, are larger, more integrated, and more complex than those of the core; as Fathy (1966: 73) notes, Nubian houses are much more impressive than the "miserly huddle usually seen in Egyptian villages." When I used nodes and access ranks to summarize differences in scale and complexity, I found the differences in the average numbers of nodes of the two groups to be statistically significant at the .05 level (based on a one-tailed *t*-test of difference of means), although the

Table 5-9. Comparison of Nile Valley Houses—NG = Nodes in Graph, HL = Hierarchical Levels, CR = Circuits, AC = Accessibility Ranks, SI = Specialization Index

	NG		*HL*		*CR*		*AC*		*SI*		
	Mean	*S.D.*	*Mean*	*S.D.*	*Mean*	*S.D.*	*Mean*	*S.D.*	*Mean*	*S.D.*	N
Core	8.6	2.9	3.7	1.3	0	—	4.6	2.3	1.9	1.6	14
Periphery	10.5	3.9	4.1	1.4	.56	.9	5.6	2.6	3.5	2.6	23

difference in mean access ranks was statistically significant only at the .1 level. Although periphery houses on average are larger, more integrated, and more complex than core houses, the population of periphery houses is also more varied, indicated by the larger standard deviation for each of the measures (again, using nodes and ranks as indicators, I tested the difference in variances using a one-factor ANOVA, but the statistical significance of the *F*-test was only .1 for nodes and .25 for ranks). Although not all the differences between the two populations are statistically significant at high levels, nonetheless I think it is reasonable to provisionally accept the conclusion that there are two distinct populations of houses, reflecting a difference between core and periphery of a Nile Valley macroregion.

Although the data on regional variation in rural houses in Thailand is spotty, there is some indication of the nature of core–periphery differences there as well. The large, tile-roofed, hewn teak houses of the sort described from Chiangmai (SEA01; SEA001 and 002) that are found in northern Thailand (cf. Krug and Duboft 1982) (Figure 5-7)

Figure 5-7. Teak house, northern Thailand, near Chiangmai. Photograph by the author.

are, to quote Jack Potter (1976: 23), "beautiful dwellings by any architectural standards" (cf. deYoung 1955: 29). In contrast, the households of the rural core in the rice-growing alluvial plain of Central Thailand consist primarily of nuclear families residing in small, easily dismantled houses, built of simple materials, including bamboo walls and thatch roofs (Sharp, Hauck, Janlekha, and Textor 1953: 124–126; cf. deYoung 1955: 30). DeYoung (1955) attributes this difference to the higher costs of labor and building materials in the rice-growing plain, but other factors are probably involved, related to the greater frequency of complex households with external economic orientations in the northern Thailand periphery.

I attempted to use the literature on vernacular rural architecture to investigate core–periphery differentiation in Japan (Beardsley, Hall, and Ward [1959: Chapter 2] distinguish core, periphery, and frontier zones), but I found the published information insufficient in light of my goals. Several of the houses illustrated in this literature from peripheral (or frontier) regions, especially those in areas of silkworm production, are exceptionally large by Japanese rural standards (e.g., Nishi and Hozumi 1983: Figures 157 and 161). Beardsley, Hall, and Ward (1959: 477–478) contrast the relatively egalitarian "closed corporate" communities of the rural Japanese core, like Niiike (IP02), with the "intensely hierarchical" communities like the one they describe from a periphery region, in which centralized community control emanated from a "great house." I return to their discussion below.

HOUSEHOLD COMPOSITION AND SOCIAL REPRODUCTIVE STRATEGY

One factor that might contribute to the explanation of variation in houses in cores and peripheries relates to household composition and size. Research by Pasternak, Ember, and Ember (1976) suggests that households with diversified productive activities that keep some members away for long periods, including trade expeditions and migratory labor, might tend to develop multifamily organization ("complex" in my terminology, "extended" in theirs), where married couples remain with parents rather than quickly establishing neolocal households. It seems reasonable to expect that this causal linkage would apply more

forcefully in my periphery communities than in my core communities, given the more frequent incidence of long-distance trading and labor migration in peripheries. Another feature of periphery household economics favoring complex form is the production for export of exotic goods, added to the production of goods consumed every day. This diversified production strategy might result in labor bottlenecks that favor larger households capable of successfully producing a broad range of goods (Wilk 1984; Wilk and Rathje 1982).

Thus I would predict a statistical association of complex households with periphery communities, and nuclear households with core regions. Within my sample, however, nuclear families are the most frequent type in both cores and peripheries (the absence of household surveys in most of the coded ethnographic sources unfortunately prohibits expressing this and related variables as percentages of household types). Table 5-10 shows the frequency of nuclear households by core and periphery status. Sixteen of the 23 communities for which I had data display a predominance of nuclear households, and they are split fairly evenly between core and periphery, as are the cases where the nuclear form is less common.

My variable EXT, "external orientation," described previously, comes close to coding for the kind of external trips that Pasternak, Ember, and Ember were concerned with in their analysis. It is very similar to my periphery classification, except that it does not include cases of exotic goods production alone as an indicator of periphery status. Table 5-11 indicates that about 45% of the cases with a predominance of nuclear families have an external orientation. Although there is an effect in the predicted direction, the theoretical prediction linking household form in general to core–periphery differentiation (or external orientation) is only weakly supported. As I mentioned, periphery households are larger than core households (core = 5.046, periphery = 6.32, excluding CH05; *t*-test for difference of means is significant at

Table 5-10. Frequency of Nuclear Households by Core and Periphery Status

	Core	*Periphery*
Nuclear households rare	3	4
Nuclear households common	9	7

Table 5-11. Frequency of Nuclear Households by Local and External Economic Orientations (EXT in Appendix 10)

	Economic orientation	
	Local	*External*
Nuclear households rare	4	3
Nuclear households common	11	5

the .05 level), but the form of the household in periphery communities can be quite variable, and not necessarily complex. My results are different from those of Pasternak, Ember, and Ember, I think, because all the households in my sample are, comparatively, "peasant" in orientation, and the nuclear form of the family tends to dominate numerically irrespective of macroregional setting. Their sample is more diverse and includes tribal societies where complex forms are a more frequently occurring type in general. It is also possible, although not demonstrable within my community data, that periphery communities of the type I am concerned with contain a minority of complex households that engage in long-distance trade, labor migration, and/or export, among a majority of nuclear households that are limited to a more restricted scale of commercial transactions.

Another possible confounding factor in comprehending variation in household form in communities like those of interest to this study is weakly hinted at in MacFarlane's (1976: 331) discussion of Gurung (SA03) households. In this case, labor migration has been so financially remunerative for some men that they are able to afford the construction of separate houses. This has brought a decline in the incidence of "fraternal joint" (complex) households and stands as a process working in opposition to that suggested by Pasternak, Ember, and Ember. This kind of social transformation is frequently reported within the cases in my community sample. In 41% of the cases for which there are data ($N = 17$), a recent decline in large households is specifically mentioned, and this is strongly statistically associated with the presence of social and economic reform (mentioned for 90% of the communities in the sample, $N = 20$), and improvements in transportation and roads (86%, $N = 22$) (Appendix 1).

There is similarly an unexpectedly weak connection between core and periphery status and the cognitive models I earlier referred to as

the social reproductive strategy. This referred to an ideal describing the desirability, for the senior couple, of retaining married children within the parental house or compound. Table 5-12 indicates that the social reproductive cognitive model is not always realized, in the sense that a continuity strategy is evenly split between communities where the nuclear family was predominant and where it was not, although 5 out of 6 cases of the neolocal strategy in fact have a predominance of nuclear households. This seems to indicate pressure against the maintenance of complex households in the communities in the sample, even where a cognitive model exists that would tend to produce a greater number of them.

Based on the previous discussion of the advantages of complex households in peripheries, one might predict the use of cognitive models there that would tend to result in the perpetuation of complex households, whereas this same kind of strategy would be less important for the strategies of core households. Actually, from Table 5-13, it is clear that core households are almost evenly split between the neolocal and household continuity strategies. Periphery households have relatively few occurrences of either of the two extreme forms of the cognitive models of social reproductive strategies and are found instead more frequently in my intermediate category, where a household continuity ideal is expressed rather equivocally. When I substitute external orientation for core–periphery status, the result is similar (Table 5-14).

I conclude there is a tendency for the externally oriented periphery households to embrace some form of a cognitive model of household continuity (only one case, Cherán [MS003], has an explicit model of neolocality), but the model employed tends to be the more equivocal and flexible form that I coded as "intermediate." This may be comprehensible by reference to the nature of periphery adaptation. I suggest

Table 5-12. Frequencies of Nuclear Household Occurrence by Household Reproductive Strategy, Where "0" = Neolocal, "1" = Intermediate, "2" = Household Continuity Strategy (Str in Appendix 7)

	0	*1*	2
Nuclear households rare	1	1	4
Nuclear households common	5	7	4

Table 5-13. Household Social Reproductive Strategy (Str in Appendix 7) by Core and Periphery Status (Appendix 8), Where "0" = Neolocal, "1" = Intermediate, and "2" = Household Continuity Strategy

	Core	*Periphery*
0	5	1
1	2	6
2	5	3

there will exist natural advantages for young married couples who maintain residence in a periphery household, whose senior generation managers can pass on to their children the long-distance connections to trading partners and other sources of external economic opportunities. Thus, in these situations there may be less need to deploy a cognitive model that ideologically buttresses the complex household, and less need to manifest the accompanying symbols of canonical communication that sacralize household continuity. In fact, among the houses in my community sample, the value of canonicality (Canon from Appendix 7) for the core villages is somewhat higher (mean = 2.25) than the average value for the periphery villages (mean = 1.64). Interestingly, core households tend to display a strong tendency either toward neolocal or toward household continuity cognitive models. In these cases, the cognitive model of ideal household cross-cuts core–periphery differentiation. I discuss this interesting result below.

NETWORK INTERACTIONS VERSUS MARKET STRUCTURE

The previous analysis suggests that differences in houses between cores and peripheries are weakly bound up in the differing productive

Table 5-14. Economic Orientation (EXT in Appendix 10) by Household Social Reproductive Strategy (Str in Appendix 7), Where "0" = Neolocal, "1" = Intermediate, and "2" = Household Continuity Strategy

	Economic orientation	
	Local	*External*
0	5	1
1	3	5
2	7	1

strategies of households and their cognitive models and strategies of household continuity, both of which should tend to produce larger, more complex households (and thus, houses) in peripheries—in at least some cases. But my ethnographic sources provide fragmentary information indicating the possibility that a more complex causal matrix may be involved. Recall that periphery "basic" houses tend to be smaller and less complex than core "basic" houses. Thus the tendency to larger households and larger, more complex houses, on average, in peripheries is likely to be attributable to the presence of a comparatively few very large, wealthy households like the "great houses" of the Japanese periphery village mentioned by Beardsley, Hall, and Ward (1959: 477).

It is not clear how household productive strategies of the sort just discussed could result in a pattern of enhanced differentiation in household form and houses in periphery villages, while minimizing variation in core communities. Beardsley, Hall, and Ward (1959: 477–478) explain the differences between the relatively egalitarian villages like Niiike, and the "intensely hierarchical" villages as follows:

> The residents of this [hierarchical] village, living on land originally controlled by one single household . . . were never in a position to operate on a principle of mutuality . . . . Similarly, whenever landlords have been able to rise from within a community or to wedge into it from the outside . . . or wherever special crops or alternative occupations such as mining or handicrafts provided unique, non-agricultural income to the entrepreneur . . . . The growth of the egalitarian, corporate community was almost certain to be warped or thwarted.

I eliminated communities from my analysis of core–periphery differences where all but a few households are tenants, so this factor cannot be the central one accounting for differences in my community data. The other factor they mention, "unique, nonagricultural income," seems more likely to be the kind of factor present more often in periphery communities, where there is in some cases the production of exotic goods for export, but not all nonagricultural sources of income will necessarily result in a more hierarchical social system. Some of the core communities in my sample contain households that have nonagricultural sources of income, for example, the production of low-order craft commodities, local trading, shopkeeping, and so on. I suggest that it is in the nature of the linkages between households

and markets that an explanation should be sought for the existence of social variation, rather than in the simple presence of alternate nonagricultural sources of income.

Smith (1976b: 310) argues that social stratification "is seen to result from differential access to or control over the means of exchange." Several features of periphery economics potentially lend themselves to such differential access and control, and thus the concentration of wealth. In Alişar, for example, where the nearest rail-head is several days round-trip from the village, poorer peasants cannot afford to market their grain surpluses. According to Morrison (1939: 105–116):

> Although the railway has made it possible for Alişar to ship surplus grain to the large markets of western Turkey and to obtain a better price than formerly, it has been of chief benefit to the relatively well-to-do peasant—the "kulaks." To be sure, the middle peasants have benefited also from the higher prices they obtain for their occasional small surpluses. But the poorer peasants . . . have benefited hardly at all.

I would argue that there are additional elements leading to the development of differences in periphery communities that might be related to the marked differences I have noted between basic and costly houses. In core communities, all households, even poor ones, have equal access to multiple market places within comparatively short distances. In peripheries, commercial transactions are more spatially diffuse and more likely to be based on various kinds of external contacts working at a distance, including trade partnerships, connections to government officials, family members residing in distant urban centers, and so on (network ties), in addition to the market system per se (market structure).

I suggest that network ties are much more subject to monopoly control by wealthy and influential periphery households, a situation that could produce and reproduce wealth inequality within communities. Shami (1989) points to the consequences of the initial expansion of Ottoman economic ties to Jordan in the nineteenth century; some households prospered whereas others declined (p. 462) (a house of one of the successful households described in this article is coded as SWA217; with 35 nodes and 21 accessibility ranks, it is one of the largest and most complex dwellings coded in the entire Southwest Asian sample). Fei and Chang (1945: 303–304) point out that in the rural Yunnan communities they studied, the profits from traditional

(local market-based) trade are diffused throughout the general population, whereas external-oriented trade ("capitalist" in their terminology) brings "disastrous" consequences to the poor peasants who are unable to share in the profits (cf. Gallin 1966: 53, on external linkages of wealthy families in a Taiwan village).

Formal entertaining of guests traveling long distances is one aspect of monopoly control of network ties noted by Morrison (1939: 87). He observed that:

> to be able to build and maintain a room or house exclusively for the entertainment of guests is to have superior wealth. Moreover, the owner of a guest house has contact with the outside world which is denied to most villagers. Being in a position to offer food and lodging to a traveller, he is the first to hear any news the traveller may have, a fact that may be of material advantage to him . . . . If the traveller be an official, the host is in a position to ask some favor for himself or for his friends, and this tends still further to strengthen his position in the community . . . . Finally, to own a guest house is to be known beyond the village.

Specialized guest quarters are found mostly in Southwest Asian houses (even Baghestan, a poor village I classified as core, has a small guest room in its largest dwelling). Separate quarters for guests are well represented in my sample of Nubian houses (including SWA149–153). Elaborate entertaining of guests is a widely described feature of Nepalese household behavior (e.g., Sestini and Somigli 1978: 24–25; my examples SA044 and 045 have specialized guest rooms), and they are found in some Chinese and Taiwanese houses (e.g., Yen-liao CH05; cf. Kulp 1925: Figure 5). The important point to be learned from the observation about guest entertaining is the fact that a potential exists in peripheries for wealthy households to monopolize network ties to distant outsiders and that these ties can produce material advantages. In rural cores, I suggest, local markets are available to every household, inhibiting stratification based on a monopolization of external ties, and thus contributing to the relative absence of wealth differentiation as indicated by my data on the scale, integration, and complexity of houses.

EVALUATING THE MODEL

In spite of the almost overwhelming methodological and conceptual difficulties I encountered in attempting to evaluate a macroregional

theory with a body of comparative data of the sort I am working with, I feel the effort has been worthwhile. Several tentative conclusions are justifiable, I believe, in light of the results of my analysis. One result of this exercise has been to allow me to better comprehend the nature of variation in houses within communities. In core villages, houses tend to show relatively little intracommunity variation in terms of scale, complexity, integration, and indexical communication. In part, I argued, this is due to the proximity of multiple local marketing destinations, and hence a relative egalitarian access to commercial transactions, although many other factors not considered here may operate to bring about this outcome, including, in a small number of cases, a cognitive model that may restrict the free expression of wealth differences. In many cases, core households (and houses) may be comparatively small because, as they are engaged primarily in local market transactions, there would be fewer advantages to complex households, with the exceptions I discuss below. Houses in core villages tend to be less externally showy than their counterparts in periphery villages. I suggested that this is attributable in part to the comparative absence of "status anxiety" in agriculturally oriented core villages, where the relative wealth of each family is likely to be known widely within the community, based on a knowledge of variation in access to the factors of production. An external orientation and the attendant status anxiety is one source of the greater showiness of the costly houses of the periphery.

The model is not entirely successful, however, in accounting for differences in household form and social reproductive strategy. To some degree, the comparatively diversified economic activities of the periphery household are associated with a slight tendency toward more complex forms, at least for some households. The paucity of household surveys makes it impossible to pursue this issue in more depth with my community data, but given that periphery basic houses are actually smaller, on average, than those in the core villages, I tentatively conclude that a periphery strategy producing the large, complex households is found primarily among a minority of families whose external ties are a source of concentrated wealth and power. The social reproductive strategy of household continuity, however, is only weakly connected with periphery status and often takes the

form of the more equivocal cognitive model I coded as intermediate; the cognitive model of household continuity is found also in some core villages.

The canonical communication of the symbols of household hierarchical structure, continuity, and solidarity transcends the core–periphery categorization. As I mentioned, among the houses in my community sample, the value of canonicality for the core villages is actually higher than the average value for the periphery villages. Several core villages have among the highest values of canonical communication in my sample: Niiike (IP02), Taitou (CH04), Khanh-Hau (SEA02), and Zinacantan (MS001). All display strongly expressed ideals of household continuity and multifamily solidarity. All but Zinacantan participate in a cultural substratum in and adjacent to China, where some mix of Confucian and Buddhist religious beliefs condition the cognitive model of ideal household form. Can this fact alone explain their similarities? Possibly, but there is another factor to consider. Households in these same villages (again, except for Zinacantan) also engage in agricultural commodity production involving highly labor-intensive irrigation and complex strategies of multiple cropping. Although these are not the diversified economies of the periphery households, still, there would be, as a result of these agricultural strategies, substantial advantages to household continuity in a situation where household labor needs are severe. I suggest that a household continuity strategy, bolstered by an elaboration of canonical communication of habitus, can be understood in these situations as an outcome of conflicts likely to occur between young couples, who have access to economic opportunities and who wish to establish autonomous households, and the senior generation, which benefits from the labor of their married offspring.

Chapter 6

Conclusion

STEPS TOWARD A METHOD OF WEALTH COMPARISON

Anthropologists and other researchers have devoted increased attention to studies of peasants in recent decades, particularly in the form of village-based ethnographic (or historical and archaeological) case descriptions. But there has been inadequate attention paid to comparative research that would allow us to utilize these data to systematically evaluate our various theoretical frameworks in the broadest possible sense. My goal in this book has been to contribute both substantively and methodologically to the comparative endeavor. One of the problem areas of relevance to this work relates to variation in the comparative evaluation of standard of living. I first became aware of the promises—and pitfalls—of this kind of inquiry through Fernand Braudel's stimulating observations in his *Structures of Everyday Life* (1979), in which he compared the world's major historical civilizations based on diet, houses and their furnishings, and costume. Are we to accept his conclusion that medieval Europe was the "richest" preindustrial civilization? Although Braudel's knowledge of these matters is broad, his method seems impressionistic. For example: Is he basing his conclusions on sufficiently representative data? Can his compared categories really indicate wealth differences, or do they simply indicate cultural preferences? Part of what I hoped to accomplish in my research is to improve the comparative method and then extend

Braudel's comparison of historical cases to include the world's contemporary peasants.

In the evolution of agrarian civilizations, have rural populations tended to fare better or worse materially? Which civilizations have the "richest" rural populations, and why? What are the relationships between the cultural evolution of complex societies and patterns of rural wealth inequality? Answering such questions will be a formidable mission, due to the large amount of information, and the methodological and conceptual difficulties of the comparative task. The development of effective techniques for the measurement of wealth differences, within and between communities and regions, is essential to the progress of social-science inquiry and discourse. Refining our comprehension of the causes and consequences of poverty, inequality, and stratification is predicated in large part on learning new and more effective ways to assess how wealth variation relates to variation in power, status, prestige, and the control of resources.

My original goal in the research reported in this volume was to develop and evaluate new methods for the measurement and comparison of wealth (or "standard of living") differences, applicable in social settings where monetarily based measures of income and per capita output cannot be derived. This is an important endeavor because the measurement techniques now available to us are problematic in several regards, especially from the point of view of the researcher interested in social change over long spans of time, including prehistory, and in cross-cultural hypothesis testing. Many of the measures used in the "social indicators" research require data not usually available from, or which are inapplicable to, historically and anthropologically known populations, such as measures of human capital, diet, or measures of physical well-being such as morbidity and mortality rates (e.g., Morris 1979). The latter are especially problematic for comparative research because mortality and morbidity rates vary substantially according to population age structure irrespective of variation in the quality of life (e.g., Morris 1979; Bayless and Bayless 1982) (an even more serious problem is the lack of suitable data in the great majority of cases). In the anthropological and rural development literatures, the most common approach to the assessment of wealth differences is to rely on measures of land and livestock holdings (e.g., Smith 1980). However,

any method based on control of productive resources will be misleading in cases where there are sources of income not based on production, for example, trade or labor export. Also, the use of such measures precludes the testing of hypotheses regarding how wealth varies in relation to differential access to the means of production. An ideal measure will be one that determines who ends up with wealth, however it is gained. Jones (1980: xxxiv) argues that a material assets approach will provide a superior comparative method for wealth assessment in the case of poorly censused populations where diet, health indicators, or real income cannot be effectively reconstructed. Following her lead, anthropology and related disciplines have made progress in this methodological direction, as is made clear in a recent review article by Michael Smith (1987).

Probably the most successful application of a material possessions method to the analysis of wealth variation has been done by rural sociologists studying the United States and Western Europe. According to Haller (1970), inequality can be measured along three major dimensions (wealth, power, and prestige), and rural sociologists have found that these variables are so closely linked that they can be summarized using an overall measure of socioeconomic status. Measures of material assets have proven useful in gauging this summary variable. For example, Chapin (1933, 1935) assessed social status based on four attributes (cultural equipment, effective income, material possessions, and participation in social organizations) and found that these variables all correlated highly with a simple weighted index of the possessions, equipment, and condition of the main living room (cf. Belcher 1972). But research in non-Western social settings often arrives at other conclusions. In two recent ethnoarchaeological studies of peasant villages, wealth and material possessions were found to be only weakly associated (Hayden and Cannon 1984: 129, passim; Kramer 1982: 71–75). Results like these warn us to be wary of simply equating wealth variation with material possessions variation.

For reasons that I described in the first chapter, I decided to emphasize variation in housing as my key indicator of wealth variation, aiming for a method that would allow measurement not only within communities, but between regions, or even whole civilizations, as Braudel attempted to do. Although housing will probably provide

the best overall indication of wealth variation, there is an important bridge between wealth on the one hand, and the material expression of wealth on the other, that has not been adequately explored in the material culture literature. With housing, as for other types of material possessions, some variation is due to differing degrees of propensity to express wealth materially. It follows that any attempt to evaluate wealth differences without knowledge of the underlying consumer behavior will be doomed to fail. This book is a first attempt to lay out and evaluate this kind of consumer theory.

It has long been recognized among certain economists that the degree of material display is influenced by specific socioeconomic conditions (e.g., Veblen 1899; cf. Mason 1981, Chapter 2). Several recent works by authors like Mary Douglas and Grant McCracken, which I have referred to throughout this work, have paved the way by beginning to specify just what some of these socioeconomic conditions might be. Although there are many methodological impediments in the way of this line of inquiry, in economic systems where income and wealth are difficult to measure monetarily, I believe the analyses reported on in this book expand our comprehension of consumer behavior in social contexts, at least in the specific case of decisions about housing; other material categories, such as clothing, diet, and home furnishings, will require similar analytical treatments.

In the specific case of peasant housing, the results of my analyses point to several socioeconomic factors influencing consumer decision making. Household social reproductive strategy resonated through several aspects of house structure, function, and costliness. I include here the richness of internal canonical communicative elements, complexity of spatial structure, and the costliness of building materials and techniques. Households emphasizing senior-generation control and multigenerational continuity tended to build symbolically loaded houses characterized by comparatively complex, hierarchically structured patterns of space use, manifesting status distinctions based on gender and generation. These households tended to favor more costly building materials, reflecting, I hypothesized, a strategy of curatorial consumption that is part of the strategy of household continuity. The economic strategies of households, and their positions in macroregional exchange networks and market structures, also influenced housing deci-

sions. Households in communities where external ties are comparatively important tended to engage in more indexical communication of wealth, reflecting, at least in part, a process of status anxiety.

The households of a rural periphery elite stand in sharp contrast with poorer households of the same communities, households that are less able to participate in the long-distance economic strategies of the peripheries. The greater similarity of houses within core communities reflects, in part, a more equal access to commercial transactions in the more highly commercialized cores. Cognitive models of egalitarianism impinged on the propensity to consume in some villages, but were found to be less pervasive than what I had expected based on my reading of the traditional literature of peasant households and communities. Social boundary communication of households evidently also produced a weak effect, influencing decisions about the outward showiness of houses; to some degree, more autonomous households probably signify their tightly drawn boundaries through an external decorative elaboration. Political factors were not specifically addressed in my analysis, except to note that sumptuary laws promulgated by central authorities were not found to substantially condition housing decisions in any of the cases included within my sample (sumptuary regulations existed in some of the study areas prior to the modern period). I return to these political issues below.

My goal was to develop a consumer-behavior theory that would serve as a backdrop to comparative studies of wealth and wealth variation. I believe I have moved toward that goal. For example, as I first began to code the Mesoamerican village data, I was surprised at how comparatively small and simple these houses were, and at how frequently they were constructed of inexpensive building materials (fired bricks are rarely found, and wattle-and-daub construction occurs more frequently than most of the other regions from which I had coded data). Initially, I regarded this as evidence of the comparatively poor economic position of Mesoamerican rural villagers, and this may still be a reasonable conclusion. On the other hand, this type of domestic built environment is not a result of poverty alone. It is also the outcome of consumer behavior processes that would be expected in a social system in which there is a tendency toward nuclear households and neolocal social reproductive strategies, and in which house-

holds are strongly embedded within highly integrated agricultural villages where status is communicated primarily through channels other than houses (there is variation within Mesoamerica as a whole, but these are common patterns). This is not to deny the extensive economic deprivation of many Mesoamerican peasant villagers, but enlightened comparative research that will document inequality and poverty will have to take into consideration these factors that influence housing choices.

CROSS-CULTURAL ANALYSIS AND PEASANT STUDIES

Beyond the fact that a consumer-behavior theory provides a backdrop to comparative research on wealth differences, there are other important methodological and theoretical implications of the line of inquiry I have pursued in this book. One of these has to do with the use of cross-cultural method in the context of peasant studies. Any cross-cultural comparative study that has peasant households as its subject matter will by necessity face the methodological difficulty of disentangling behavior (the outcome of choices made within households in varying social and economic circumstances) from cultural matrix (customary patterns of actors reflecting values and norms). Obviously both culture and behavior can be found in any human society, but in traditional cross-cultural research, the cases chosen for analysis are carefully selected from unrelated cultural traditions (so far as this is possible). This allows the researcher to avoid duplication of culturally similar cases (Galton's problem) in order to get a clearer picture of the underlying behavioral patterns. In comparative peasant studies, this strategy is much more difficult to realize because most ethnographically known peasant communities are embedded within a few major cultural traditions (e.g., China, South Asia, Islam). Thus "external validity"—the degree to which one's conclusions have general validity beyond the particular sociocultural systems used in the analysis—becomes a crucial issue.

Throughout this book I have tended to regard each community as an isolated case, while at the same time pointing out the degree to which there might be redundancies, due to the inclusion of culturally

similar cases, that could influence the outcome of statistical analyses. Specific cases were at times deleted from an analysis to evaluate the effects of redundancy. Galton's problem was perhaps most clearly manifested in the case of my variable that measures community integration. Specifically, these data were strongly dichotomized due to the presence of a cluster of Chinese communities on the one hand that display very low levels of community integration, and the Mesoamerican communities on the other that as a group show a much greater degree of integration. This methodological problem and others like it could be resolved, to some degree, through the development of more sensitive measures better able to detect variation within, as well as between, culture areas.

The analyst has to be aware of the difficulties inherent in Galton's problem, while at the same time realizing that there are actually some advantages to be gained where a researcher's cases are drawn from a small number of major cultural traditions. This is true when it is possible to compare cases within a culturally uniform area that illustrate varying socioeconomic circumstances (e.g., production strategies, core versus periphery, strength of the state, etc.); I selected cases for coding that could maximize exactly this kind of intracultural variation. Comparing cases selected in this way then allows an evaluation of hypotheses about behavioral processes while, in essence, controlling for cultural content ("intracultural analysis"). Some of my conclusions have been supported based on an assessment of this kind of variation, particularly regarding south versus north and central China, and in the differences between the main series and other housing traditions influenced by Islamic practice, among other situations. I had hoped to find even more cases illustrating variation within culture areas. India was particularly disappointing in this regard. The differences from north to south in household social reproductive strategies outlined by Goody (1990, Part II) would have provided a rich matrix for hypothesis testing about housing strategies. And I had hoped to find codable village studies from peripheral Japan, from north China, and from the alluvial plain of Thailand, among other possible situations, that would have helped me to further comprehend the causes of behavioral variation within macroregions exhibiting broadly similar cultural contexts.

HOUSING, SOCIAL HISTORY, AND THE POLITICAL ECONOMY OF COMPLEX SOCIETIES— A HYPOTHESIS FOR FUTURE CONSIDERATION

In addition to the possibilities to be found in intracultural analysis, another potentially fruitful avenue of research available to peasant studies will involve the comparison and contrast at a between-region scale of analysis, what might be called a "macrocomparative approach" (like the "comparatively oriented case studies" in Ragin 1987). Here, a distinct advantage is found, not usually available to traditional cross-cultural research, namely that data are available from each of these major cultural regions that will make it possible, eventually, to place the built environment within the context of long-term social and cultural history. This level of inquiry exceeds the aims of this book, but in my final comments I would like to point to several topics that deserve scrutiny as we work toward improving our understanding of the social and historical contexts of the built environment. I start these final comments by summarizing major factors, as I see them, influencing housing choice in regions considered in this book.

I. China and Adjacent Areas (Japan, Northern Thailand, Vietnam, Himalayas)

Although there is considerable variation, villages in this broad area tend toward complex households, strategies of household continuity (including curatorial consumption) and elaborate canonical communicative strategies of the habitus (with some indication of social boundary communication), strong commercialization, and the free expression of indexical indicators of wealth differences, all especially pronounced in periphery settings. A low degree of community solidarity is found, with few exceptions.

II. Hindu India

This area tends toward core community adaptations and landlordism, with a weaker degree of household complexity, and few indicators of intrahousehold canonical communication of the domestic symbols of the habitus are present (particularly in the south, although more data

are needed to confirm the dimensions of north–south variation). Little indexical communication by means of external decoration is found; the major channel for between-household communication consists of expressions of status through the management of purity and defilement, manifested most clearly in the symbolically demarcated spatial domains of higher-caste houses.

III. Southwest Asia Main Series

This area tends toward core community adaptations and landlord–tenant arrangements, and toward nuclear households with few or no indicators of intrahousehold canonical communication of symbols of the habitus. Minimal indexical expression of wealth differences is found; "introverted" houses hide facades from public view. Social status is based in part on the public display of appropriate separation of male and female domains of the house.

IV. Southwest Asia "Other"

Although a variable group, they tend toward periphery adaptations and complex households, with some expression of intrahousehold canonical communication (although household symbolism is comparatively weak everywhere in Islamic-influenced areas). Social status is linked to separation of male and female domains, as elsewhere in areas influenced by Islamic practice, but this is combined with an extroverted expression of indexical communicative strategies in periphery situations.

V. Mesoamerica

This area tends toward core adaptations and neolocal social reproductive strategies; simple households are comparatively common (except in highland Maya villages like Zinacantan). Except for these Maya cases, there is little canonical expression of cosmological principles in houses; canonical communication is related to the expression of social status through participation in public ritual in highly integrated communities. Only a minimal degree of indexical communication is found except in rare cases of external economic orientation.

This summary nicely points to a broad distinction that can be perceived between the East Asian houses in general (and in those of adjacent South Asian Himalayas), and those from other regions in my sample. In China and adjacent areas, the importance of the canonical communication of the habitus is maintained to some degree almost everywhere, even in some cases where complex households are probably relatively infrequent; this, coupled with a household social reproductive strategy of household continuity (and the related curatorial behavior) and a tendency toward indexical communicative display (and perhaps an element of social boundary communication), produces rural houses that frequently are quite complex, large, costly, heavily invested with symbols, and showy.

By contrast, in Hindu India, most of Southwest Asia (excepting some of my "other" category), and Mesoamerica, houses tend to be smaller, structurally simpler, more introverted, and less symbolically loaded (and thus less costly), in part because these regions tend toward core adaptations, simpler households, and neolocal social reproductive strategies. In these regions, the canonical communication of the habitus is transformed into the canonical communication of social status, expressed through channels based in community life rather than in domestic life. Thus not only are they lacking, comparatively (with some exceptions), in the abundance of internal domestic symbols of household solidarity and continuity, they also tend to minimize material indexical display as the major form of interhousehold communication. In Wolf's (1955: 458) words, describing the closed corporate communities of Latin America: "Conspicuous consumption is geared to this communally approved system of power and religion rather than to private individual show." However, I found that this behavior is not often predicated on a concept of shared poverty, as I pointed to previously. Instead, canonical communication becomes a determinant of household status in communities where an adherence to cosmological principles, publicly displayed, supplants or replaces both indexical and social boundary display.

Under what circumstances is indexical or social boundary communication replaced or supplanted by the canonical communicative display of social linkages, or vice versa? Understanding this will re-

quire us to better understand the relationship between these two forms of interhousehold communication (cf. the discussions in Rapoport 1990: 221–225, and Duncan 1982, 1985). The two forms do seem to embody antithetical communicative strategies, as I previously mentioned. Indexical display emphasizes contrast and distinction between households, whereas canonical display carries a message of community participation by declaring the household to be one of the family of true believers (although status distinctions, based on degrees of purity, can be transmitted as well). The antitheticality is illustrated in the built environment of Longana, Vanuatu. Rodman (1985) points out that the tension that is found to exist between individual accomplishment and group effort is manifested by the distinction made between the treatment of the house on the one hand, which functions in what I would call indexical display, and the men's house on the other, which expresses "social generosity." In Duncan's formulation (1982, 1985), what he calls "collectivism," with an emphasis on what I refer to as canonical communication, becomes "individualism," as an outcome of Westernization (or modernization) (cf. Rapoport 1989: 95, 1990: 24). But is rural China more "modernized" than the Mesoamerican villages, for instance, given that Chinese houses carry more indexical content and its households display more "individualism"? This seems unlikely and suggests that a theory of material communication will have to be based on more than simply a concept of modernization.

Rather than focus on modernization, per se, I suggest that we look at social communicative strategies in light of the political economy of complex societies more generally (in what follows, I have been inspired by comments in Wolf [1955] and Skinner [1971]). One aspect of the approach I have in mind is illustrated in part by the ideal of the traditional Chinese house. The state-promulgated "Han"-style house, which involves a particular set of complex construction techniques and decorative stylizations, also manifests the Chinese normative ideal of the multigenerational complex household and its associated symbolism. In my view, it is, seen from the point of view of urban political and commercial interests, an ideal form of rural domestic architecture, through which rural households can be drawn, inexorably, into a large and hierarchically structured regional economic and

cultural system. Sinicization, which is expressed in part through the adoption of the standard form of the house, requires a household to augment its ties to a regional commercial economy that provides the professional geomancers, construction specialists, and building materials that the household itself cannot supply.

Success in the regional economy (and in the official structure of the system of government offices, according to Hsu [1949: 124], passim) is openly displayed, through a decorative elaboration of roofs, gates, and facades. But to afford such a house, the rural household must, in turn, increase its capacity to generate earnings. In this way, rural economic activity is amplified, and rural areas become more directly integrated with urban centers and their institutions. Contrary to Wittfogel's suggestion (1957: 86, 87), "extroverted" domestic architecture, as in this Chinese example, rather than indicating the presence of a comparatively weak state, may actually reflect the policies of a powerful state with the ability to stimulate rural economic activity and cultural assimilation.

A contrastive political economy of rural–urban linkages is indicated by the introverted, simple houses of the Southwest Asian main series, Mesoamerica, and similar situations. In these communities, new households are readily established in inexpensive but socially acceptable houses that are built of locally available materials, almost always employing household or local-community labor rather than specialists drawn from outside the community. Canonical communicative display, emphasizing local solidarity within the community, replaces household indexical display of commercial success in the regional economy. This, I suggest, is a domestic built environment indicating a process of disengagement by rural households and communities, so far as it is possible, from external economic and political ties. These are households displaying what could be interpreted as a set of strategies for resisting the influence of exogenous urban political and commercial interests, and whose reaction to an uncertain and exploitive outside world is to intensify the importance of what Skinner (1971: 278) refers to as the "particularized subculture of the local system."

These final suggestions are presented only as hypotheses that I hope will stimulate further inquiry. But they do indicate, I think, that

knowing more about houses, and about how households make decisions about housing, may prove to be an unexpectedly useful approach, not only in better understanding households themselves, but in comprehending how household behavior relates to the social dynamics of complex societies.

Appendixes

APPENDIX 1

	RG	ID	CLM	YEAR	POPULATION	SP	TT	Households	Reforms
1	IP	1	1	1953	1530	2	•	0	1
2	IP	2	5	1952	130	2	1	1	•
3	CH	1	4	1942	8080	3	1	1	1
4	CH	2	4	1936	1458	1	1	•	1
5	CH	3	4	1938	497	2	1	•	1
6	CH	4	5	1938	720	1	1	1	•
7	CH	5	1	1964	785	3	•	0	1
8	SEA	1	1	1972	778	2	1	0	•
9	SEA	2	1	1959	3241	2	1	0	1
10	SA	1	1	1957	786	2	•	•	1
11	SA	2	5	1953	350	1	1	0	1
12	SA	3	1	1955	496	2	0	1	•
13	SWA	1	5	1944	1403	2	1	1	1
14	SWA	2	6	1977	148	1	1	•	1
15	SWA	3	5	1960	193	1	1	•	0
16	SWA	4	5	1975	400	1	1	0	1
17	SWA	5	2	1957	•	2	•	•	0
18	SWA	6	6	1980	1500	3	0	•	•
19	SWA	7	5	1932	292	2	1	0	1
20	SWA	8	5	1954	319	2	1	0	•
21	SWA	9	4	1975	•	3	0	•	1
22	MSO	1	4	1960	8000	3	1	0	1
23	MSO	2	1	1931	251	2	1	1	1
24	MSO	3	4	1940	5000	2	1	•	1
25	MSO	4	1	1948	1102	3	1	0	1
26	MSO	5	4	1945	1231	2	1	1	1

RG—Region (IP = Insular Pacific; CH = China; SEA = Southeast Asia; SA = South Asia; SWA = Southwest Asia; MSO = Mesoamerica); **ID**—Community number; **CLM**—Environment (1 = wet tropics; 2 = semiarid tropics; 3 = dry tropics; 4 = wet temperate; 5 = semiarid temperate; 6 = dry temperate); **YEAR**—Midpoint of years during which the study was done; **POPULATION**—Population size of the community (a dot indicates no data in this and other appendixes); **SP**—Community settlement pattern (1 = nucleated; 2 = compact; 3 = dispersed); **TT**—Recent change in transport technology? (0 = no; 1 = yes); **Households**—Indication of change in large households (0 = no change; 1 = recent decline in frequency of large households); **Reforms**—Are recent social reforms mentioned? (0 = no; 1 = yes).

APPENDIX 2

	REG	CID	INNUM	NF	SEF	LEF	SF	LF	PL	NFRM	NRES
1	IP	1	1	1	0	0	0	0	0	1	•
2	IP	1	2	0	0	0	1	0	0	2	•
3	CH	1	1	•	•	•	•	•	•	•	•
4	CH	1	2	0	0	0	1	0	0	3	9
5	CH	1	3	0	0	0	0	1	0	2	•
6	CH	1	4	0	0	0	0	1	0	2	•
7	CH		5	•	•	•	•	•	•	•	•
8	CH		6	•	•	•	•	•	•	•	•
9	CH		7	•	•	•	•	•	•	•	•
10	CH		8	•	•	•	•	•	•	•	•
11	CH		9	0	0	0	•	•	•	•	•
12	CH		10	•	•	•	•	•	•	•	•
13	CH		11	•	•	•	•	•	•	•	•
14	CH		12	•	•	•	•	•	•	•	•
15	CH		13	0	0	0	0	1	•	2	•
16	CH		14	0	0	0	•	•	•	2	•
17	CH		15	0	0	0	•	•	•	2	•
18	CH		16	•	•	•	•	•	•	•	•
19	CH		17	0	0	0	•	•	•	•	•
20	CH		18	•	•	•	•	•	•	•	•
21	CH	5	19	0	0	0	1	0	•	7	•
22	SEA	1	1	0	1	0	0	0	0	2	15
23	SEA	1	2	1	0	0	0	0	0	1	5
24	SEA	2	3	•	•	•	•	•	•	•	•
25	SEA	2	4	•	•	•	•	•	•	•	•
26	SEA	2	5	•	•	•	•	•	•	•	•
27	SEA	2	6	•	•	•	•	•	•	•	•
28	SEA	2	7	•	•	•	•	•	•	•	•
29	SA	1	1	1	0	0	0	0	1	1	3
30	SA	1	2	2	0	0	0	0	0	1	10
31	SA	1	3	0	1	0	0	0	0	2	7
32	SA		4	•	1	•	•	•	•	•	•
33	SA		5	•	•	•	•	•	•	•	•
34	SA		6	•	•	•	•	•	•	•	•
35	SA		7	•	•	•	•	•	•	•	•
36	SA		8	•	•	•	•	•	•	•	•
37	SA		9	•	•	•	•	•	•	•	•
38	SA		10	0	1	0	0	0	0	2	7
39	SA		11	•	•	•	•	•	•	•	•
40	SA		12	•	•	•	•	•	•	•	•
41	SA		13	•	•	•	•	•	•	•	•
42	SA		14	•	•	•	•	•	•	•	•

	REG	CIB	NNUM	NF	SEF	LEF	SF	LF	PL	NFAM	NRES
43	SA		15	•	•	•	•	•	•	•	•
44	SA		16	•	•	•	•	•	•	•	•
45	SA		17	•	•	•	•	•	•	•	•
46	SA		18	•	•	•	•	•	•	2	•
47	SA		19	•	•	•	•	•	•	•	•
48	SA		20	•	•	•	•	•	•	•	•
49	SA		21	•	•	•	•	•	•	•	•
50	SA		22	•	•	•	•	•	•	•	•
51	SA		23	•	•	•	•	•	•	•	•
52	SA		24	•	•	•	•	•	•	•	•
53	SA		25	•	•	•	•	•	•	•	•
54	SA		26	•	•	•	•	•	•	•	•
55	SA		27	•	•	•	•	•	•	•	•
56	SA		28	•	•	•	•	•	•	•	•
57	SA		29	•	•	•	•	•	•	•	•
58	SA		30	•	•	•	•	•	•	•	•
59	SA		31	•	•	•	•	•	•	•	•
60	SA		32	•	•	•	•	•	•	•	•
61	SA		33	1	0	0	0	0	0	1	3
62	SA		34	0	1	0	0	0	0	4	15
63	SA		35	1	0	0	0	0	0	1	5
64	SA		36	•	•	•	•	•	•	•	7
65	SA		37	•	•	•	•	•	•	•	•
66	SA		38	•	•	•	•	•	•	•	•
67	SA		39	0	1	0	0	0	•	•	•
68	SA		40	•	•	•	•	•	•	•	•
69	SA		41	1	1	1	0	0	0	1	4
70	SA		42	0	0	1	0	0	0	2	•
71	SA		43	•	•	•	•	•	•	•	•
72	SA		44	•	•	•	•	•	•	•	•
73	SA		45	•	•	•	•	•	•	•	•
74	SA	3	46	•	•	•	•	•	•	•	•
75	SA	3	47	•	•	•	•	•	•	•	•
76	SA		48	•	•	•	•	•	•	•	•
77	SA		49	•	•	•	•	•	•	•	•
78	SWA	1	1	•	•	•	•	•	•	•	•
79	SWA	1	2	•	•	•	•	•	•	•	•
80	SWA		3	0	1	0	0	0	•	3	•
81	SWA	2	4	1	0	0	0	0	0	1	7
82	SWA	2	5	1	0	0	0	0	0	1	9
83	SWA	2	6	0	0	0	0	1	0	2	6
84	SWA	2	7	1	0	0	0	0	0	1	7

	REG	CID	HNUM	NF	SEF	LEF	SF	LF	PL	NFAM	NRES
85	SWA	2	8	1	0	0	0	0	0	1	6
86	SWA	2	9	1	0	0	0	0	0	1	3
87	SWA	2	10	1	0	0	0	0	0	1	6
88	SWA	2	11	1	0	0	0	0	0	1	4
89	SWA	2	12	1	0	0	0	0	0	1	5
90	SWA	2	13	1	0	0	0	0	0	1	4
91	SWA	2	14	1	0	0	0	0	0	1	4
92	SWA	2	15	1	0	0	0	0	0	1	7
93	SWA	2	16	1	0	0	0	0	0	1	8
94	SWA	2	17	1	0	0	0	0	0	1	2
95	SWA	2	18	1	0	0	0	0	0	1	1
96	SWA	2	19	1	0	0	0	0	0	1	6
97	SWA	2	20	1	0	0	0	0	0	1	4
98	SWA	2	21	1	0	0	0	0	0	1	3
99	SWA	2	22	1	0	0	0	0	0	1	6
100	SWA	2	23	1	0	0	0	0	0	1	6
101	SWA	2	24	1	0	0	0	0	0	1	2
102	SWA	2	25	1	0	0	0	0	0	1	7
103	SWA	2	26	1	0	0	0	0	0	1	3
104	SWA	2	27	1	0	0	0	0	0	1	7
105	SWA	2	28	1	0	0	0	0	0	1	5
106	SWA	2	29	1	0	0	0	0	0	1	•
107	SWA	2	30	1	0	0	0	0	0	1	4
108	SWA	2	31	1	0	0	0	0	0	1	5
109	SWA	2	32	1	0	0	0	0	0	1	5
110	SWA	2	33	1	0	0	0	0	0	1	7
111	SWA	3	34	1	0	0	0	0	0	1	4
112	SWA	3	35	0	0	0	0	1	0	2	9
113	SWA	3	36	1	0	0	0	0	0	1	7
114	SWA	3	37	0	0	0	1	0	0	2	6
115	SWA	3	38	1	0	0	0	0	0	1	8
116	SWA	3	39	1	0	0	0	0	0	1	4
117	SWA	3	40	1	0	0	0	0	0	1	5
118	SWA	3	41	1	0	0	0	0	0	1	6
119	SWA	3	42	0	0	0	0	1	0	3	9
120	SWA	3	43	1	0	0	0	0	0	1	4
121	SWA	3	44	1	0	0	0	0	0	1	4
122	SWA	3	45	1	0	0	0	0	0	1	4
123	SWA	3	46	0	0	0	0	1	0	3	14
124	SWA	3	47	1	0	0	0	0	0	1	4
125	SWA	3	48	1	0	0	0	0	0	1	2
126	SWA	3	49	1	0	0	0	0	0	1	3

	REG	CIB	INNM	NF	SEF	LEF	SF	LF	PL	NFRM	NRES
127	SUVA	3	50	1	0	0	0	0	0	1	2
128	SUVA	3	51	1	0	0	0	0	0	1	6
129	SUVA	3	52	2	0	0	0	0	0	•	1
130	SUVA	3	53	1	0	0	0	0	0	1	5
131	SUVA	3	54	2	0	0	0	0	0	1	1
132	SUVA	3	55	1	0	0	0	0	0	1	3
133	SUVA	3	56	1	0	0	0	0	0	1	6
134	SUVA	3	57	1	0	0	0	0	0	1	8
135	SUVA	3	58	1	0	0	0	0	0	1	6
136	SUVA	3	59	1	0	0	0	0	0	1	7
137	SUVA	3	60	1	0	0	0	0	0	1	5
138	SUVA	3	61	1	0	0	0	0	0	1	6
139	SUVA	3	62	2	0	0	0	0	0	1	1
140	SUVA	3	63	1	0	0	0	0	0	1	5
141	SUVA	3	64	1	0	0	0	0	0	1	8
142	SUVA	3	65	1	0	0	0	0	0	1	7
143	SUVA	3	66	1	0	0	0	0	0	1	5
144	SUVA	3	67	2	0	0	0	0	0	•	1
145	SUVA	3	68	1	0	0	0	0	0	1	7
146	SUVA	4	69	0	1	0	0	0	0	3	15
147	SUVA	4	70	1	0	0	0	0	0	1	7
148	SUVA	4	71	0	1	0	0	0	0	2	8
149	SUVA	4	72	1	0	0	0	0	0	1	3
150	SUVA	4	73	•	•	•	•	•	0	•	5
151	SUVA	4	74	1	0	0	0	0	0	1	6
152	SUVA	4	75	1	0	0	0	0	0	1	5
153	SUVA	4	76	1	0	0	0	0	0	1	5
154	SUVA	4	77	1	0	0	0	0	0	1	5
155	SUVA	4	78	1	0	0	0	0	0	1	2
156	SUVA	4	79	1	0	0	0	0	0	1	4
157	SUVA	4	80	0	1	0	0	0	0	2	7
158	SUVA	4	81	1	0	0	0	0	0	1	5
159	SUVA	4	82	1	0	0	0	0	0	1	2
160	SUVA	4	83	1	0	0	0	0	0	1	8
161	SUVA	4	84	1	0	0	0	0	0	1	2
162	SUVA	4	85	1	0	0	0	0	0	1	5
163	SUVA	4	86	0	1	0	0	0	0	2	6
164	SUVA	4	87	0	1	0	0	0	0	2	9
165	SUVA	4	88	1	0	0	0	0	0	1	7
166	SUVA	4	89	1	0	0	0	0	0	1	4
167	SUVA	4	90	2	0	0	0	0	0	1	1
168	SUVA	4	91	0	0	1	0	0	0	3	12

	REG	CID	INUM	NF	SEF	LEF	SF	LF	PL	NFAM	NRES
169	SWA	4	92	0	1	0	0	0	0	2	5
170	SWA	4	93	1	0	0	0	0	0	1	7
171	SWA	4	94	0	1	0	0	0	0	2	8
172	SWA	4	95	1	0	0	0	0	0	1	5
173	SWA	4	96	0	1	0	0	0	0	2	6
174	SWA	4	97	0	1	0	0	0	0	2	8
175	SWA	4	98	1	0	0	0	0	0	1	6
176	SWA	4	99	1	0	0	0	0	0	1	5
177	SWA	4	100	0	1	0	0	0	0	3	7
178	SWA	4	101	0	1	0	0	0	0	2	8
179	SWA	4	102	1	0	0	0	0	0	1	4
180	SWA	4	103	1	0	0	0	0	0	1	5
181	SWA	4	104	1	0	0	0	0	0	1	8
182	SWA	4	105	1	0	0	0	0	0	1	6
183	SWA	4	106	0	1	0	0	0	0	2	8
184	SWA	4	107	1	0	0	0	0	0	1	4
185	SWA	4	108	1	0	0	0	0	0	1	9
186	SWA	4	109	0	1	0	0	0	0	2	7
187	SWA	4	110	1	0	0	0	0	0	1	3
188	SWA	4	111	0	0	1	0	0	0	3	12
189	SWA	4	112	1	0	0	0	0	0	1	5
190	SWA	4	113	0	1	0	0	0	0	3	11
191	SWA	4	114	1	0	0	0	0	0	1	4
192	SWA	4	115	1	0	0	0	0	0	1	4
193	SWA	4	116	1	0	0	0	0	0	1	6
194	SWA	4	117	1	0	0	0	0	0	1	5
195	SWA	4	118	1	0	0	0	0	0	1	2
196	SWA	4	119	1	0	0	0	0	0	1	3
197	SWA	4	120	1	0	0	0	0	0	1	6
198	SWA	4	121	1	0	0	0	0	0	1	5
199	SWA	4	122	0	1	0	0	0	0	2	8
200	SWA	4	123	1	0	0	0	0	0	1	4
201	SWA	4	124	1	0	0	0	0	0	1	11
202	SWA	4	125	1	0	0	0	0	0	1	6
203	SWA	4	126	1	0	0	0	0	0	1	3
204	SWA	4	127	1	0	0	0	0	0	1	8
205	SWA	4	128	1	0	0	0	0	0	1	6
206	SWA	4	129	1	0	0	0	0	0	1	6
207	SWA	4	130	0	0	1	0	0	0	2	14
208	SWA	4	131	0	1	0	0	0	0	2	6
209	SWA	4	132	0	0	1	0	0	0	2	15
210	SWA	4	133	1	0	0	0	0	0	1	6

	REG	CIB	INNM	NF	SEF	LEF	SF	LF	PL	NFRM	NRES
211	SUVA	4	134	1	0	0	0	0	0	1	5
212	SUVA	4	135	1	0	0	0	0	0	1	5
213	SUVA	5	136	1	0	0	0	0	0	1	13
214	SUVA	5	137	1	0	0	0	0	0	1	3
215	SUVA	6	138	1	0	0	0	0	0	1	10
216	SUVA	6	139	1	0	0	0	0	0	1	7
217	SUVA	6	140	1	0	0	0	0	0	1	4
218	SUVA	6	141	0	1	0	0	0	0	3	10
219	SUVA	6	142	2	0	0	0	0	0	•	1
220	SUVA	6	143	1	0	0	0	0	0	1	7
221	SUVA	6	144	4	0	0	0	0	1	•	28
222	SUVA	6	145	1	0	0	0	0	0	1	5
223	SUVA	6	146	1	0	0	0	0	0	1	13
224	SUVA	6	147	1	0	0	0	0	0	1	7
225	SUVA	7	148	•	•	•	•	•	•	•	•
226	SUVA		149	0	0	0	2	0	0	•	•
227	SUVA		150	0	0	0	2	0	•	•	•
228	SUVA		151	•	•	•	•	•	•	•	•
229	SUVA		152	•	•	•	2	•	•	•	•
230	SUVA		153	•	•	•	•	•	•	•	•
231	SUVA		154	•	•	•	•	•	•	•	•
232	SUVA		155	•	•	•	•	•	•	•	•
233	SUVA		156	3	0	0	0	0	0	1	•
234	SUVA		157	3	0	0	0	0	0	•	•
235	SUVA		158	•	•	•	•	•	•	•	•
236	SUVA		159	•	•	•	•	•	•	•	•
237	SUVA		160	•	•	•	•	•	•	•	•
238	SUVA		161	•	•	•	•	•	•	•	•
239	SUVA		162	•	•	•	•	•	•	•	•
240	SUVA		163	•	•	•	•	•	•	•	•
241	SUVA		164	0	0	0	2	0	0	2	11
242	SUVA		165	0	•	0	2	0	•	•	•
243	SUVA		166	0	•	•	2	•	•	•	•
244	SUVA		167	•	•	•	•	•	•	•	•
245	SUVA		168	•	•	•	•	•	•	•	•
246	SUVA		169	•	•	•	•	•	•	•	•
247	SUVA		170	•	•	•	•	•	•	•	•
248	SUVA		171	•	•	•	•	•	•	•	•
249	SUVA		172	•	•	•	•	•	•	•	•
250	SUVA		173	1	0	0	0	0	•	•	•
251	SUVA		174	0	0	0	1	0	•	3	•
252	SUVA		175	1	0	0	0	0	0	1	•

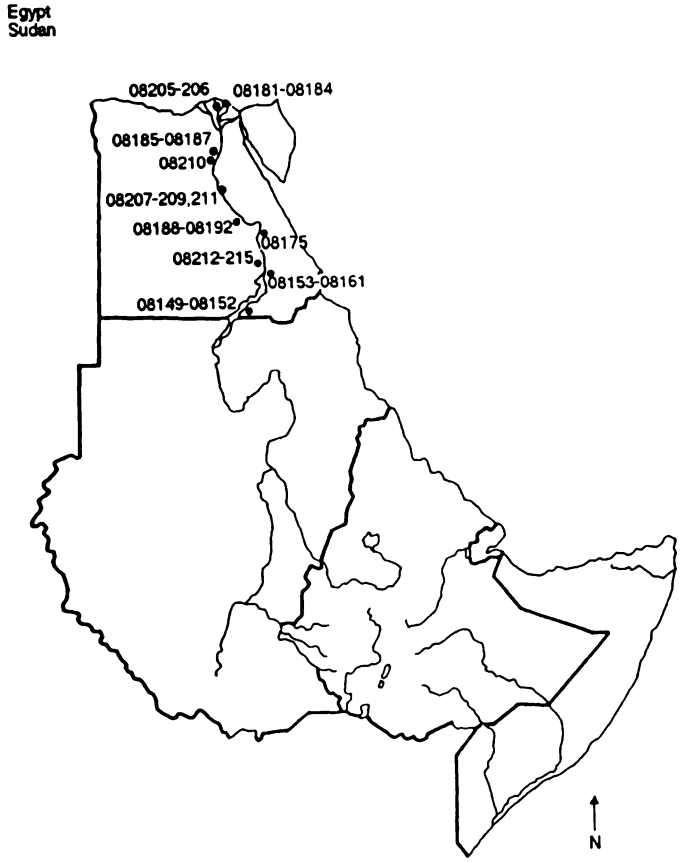
	REG	CIB	NNUM	NF	SEF	LEF	SF	LF	PL	NFAM	NRES
253	SUDA		176	•	•	•	•	•	•	•	•
254	SUDA		177	•	•	•	•	•	•	•	•
255	SUDA		178	•	•	•	•	•	•	•	•
256	SUDA		179	•	•	•	•	•	•	•	•
257	SUDA		180	•	•	•	•	•	•	•	•
258	SUDA		181	3	•	•	•	•	•	•	•
259	SUDA		182	•	•	•	•	•	•	•	•
260	SUDA		183	•	•	•	•	•	•	•	•
261	SUDA		184	•	•	•	•	•	•	•	•
262	SUDA		185	•	•	•	•	•	•	•	•
263	SUDA		186	•	•	•	•	•	•	•	•
264	SUDA		187	•	•	•	•	•	•	•	•
265	SUDA		188	•	•	•	•	•	•	•	•
266	SUDA		189	•	•	•	•	•	•	•	•
267	SUDA		190	•	•	•	•	•	•	•	•
268	SUDA		191	•	•	•	•	•	•	•	•
269	SUDA		192	•	•	•	•	•	•	•	•
270	SUDA		193	3	0	0	0	0	0	1	•
271	SUDA		194	•	•	•	•	•	•	•	•
272	SUDA		195	•	•	•	•	•	•	•	•
273	SUDA		196	•	•	•	•	•	•	•	•
274	SUDA		197	1	0	0	0	0	0	1	•
275	SUDA		198	1	0	0	0	0	0	1	4
276	SUDA		199	1	0	0	0	0	•	•	•
277	SUDA		200	•	•	•	•	•	•	•	•
278	SUDA		201	•	•	•	•	•	•	•	•
279	SUDA		202	•	•	•	•	•	•	•	•
280	SUDA		203	•	•	•	•	•	•	•	•
281	SUDA		204	•	•	•	•	•	•	•	•
282	SUDA		205	•	•	•	•	•	•	•	•
283	SUDA		206	•	•	•	•	•	•	•	•
284	SUDA		207	•	•	•	•	•	•	•	•
285	SUDA		208	•	•	•	•	•	•	•	•
286	SUDA		209	•	•	•	•	•	•	•	•
287	SUDA		210	•	•	•	•	•	•	•	•
288	SUDA		211	•	•	•	•	•	•	•	•
289	SUDA		212	•	•	•	•	•	•	•	•
290	SUDA		213	•	•	•	•	•	•	•	•
291	SUDA		214	•	•	•	•	•	•	•	•
292	SUDA		215	•	•	•	•	•	•	•	•
293	SUDA		216	1	0	0	0	0	0	1	4
294	SUDA		217	0	0	1	0	0	•	6	•

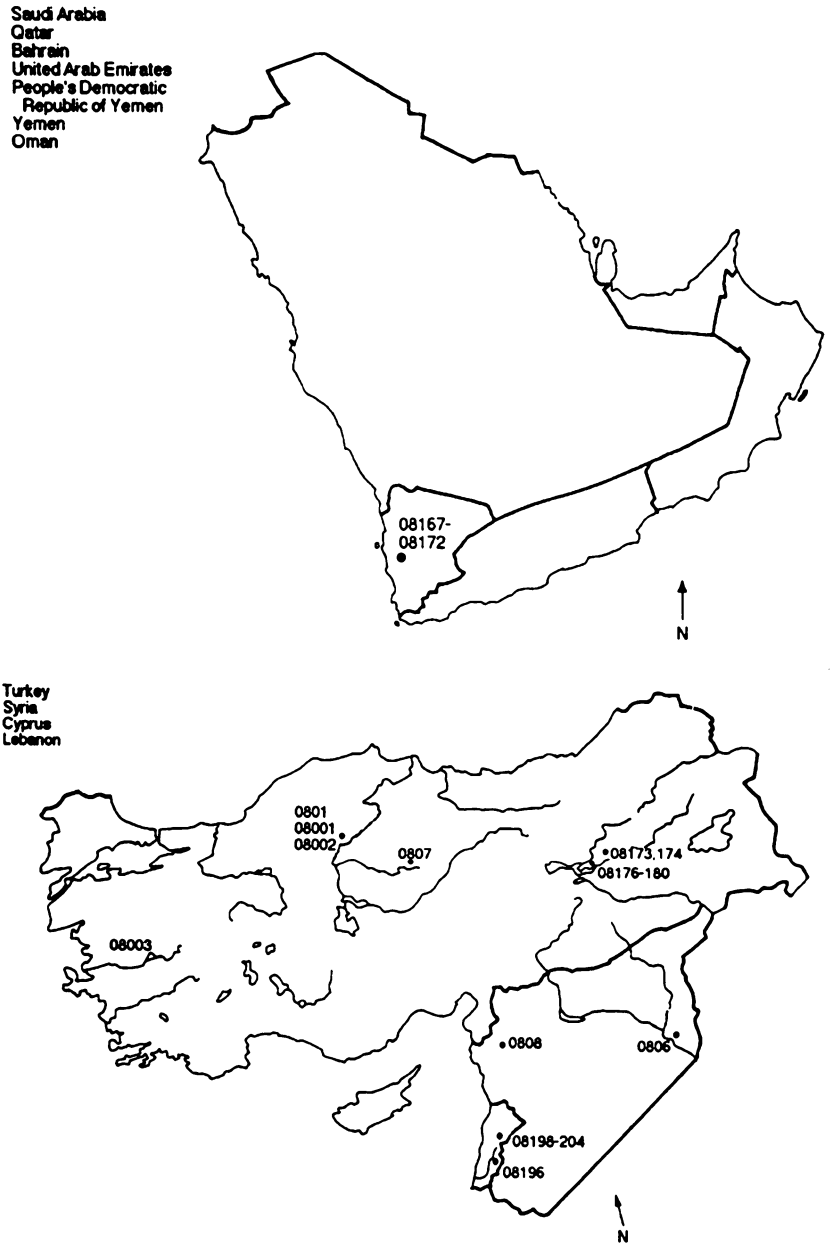
	REG	CID	HNUM	NF	SEF	LEF	SF	LF	PL	NFAM	NRES
295	SWA	9	218	0	1	0	0	0	•	•	•
296	SWA	9	219	3	•	•	•	•	•	•	•
297	SWA	9	220	3	•	•	•	•	•	•	•
298	MSO	1	1	0	0	0	2	0	0	•	•
299	MSO	1	2	0	1	0	0	0	0	3	•
300	MSO	2	3	3	•	•	•	•	•	•	•
301	MSO	2	4	3	•	•	•	•	•	•	•
302	MSO		5	•	•	•	•	•	•	•	•
303	MSO		6	•	•	•	•	•	•	•	•
304	MSO		7	•	•	•	•	•	•	•	•
305	MSO		8	•	•	•	•	•	•	•	•
306	MSO		9	•	•	•	•	•	•	•	•
307	MSO		10	•	•	•	•	•	•	•	•
308	MSO	4	11	1	0	0	0	0	0	1	•
309	MSO	5	12	•	•	•	•	•	•	•	•
310	MSO		13	0	3	0	0	0	0	2	5
311	MSO		14	1	0	0	0	0	0	1	2
312	MSO		15	1	0	0	0	0	0	1	4
313	MSO		16	0	0	2	0	0	0	2	•
314	MSO		17	1	0	0	0	0	0	1	•
315	MSO		18	2	0	0	0	0	0	1	2
316	MSO		19	2	0	0	0	0	0	•	1
317	MSO		20	1	0	0	0	0	0	1	•
318	MSO		21	0	2	0	0	0	0	2	•
319	MSO		22	•	•	•	•	•	•	•	•
320	MSO		23	•	•	•	•	•	•	•	•
321	MSO		24	•	•	•	•	•	•	•	•
322	MSO		25	•	•	•	•	•	•	•	•
323	MSO		26	•	•	•	•	•	•	•	•
324	MSO		27	•	•	•	•	•	•	•	•

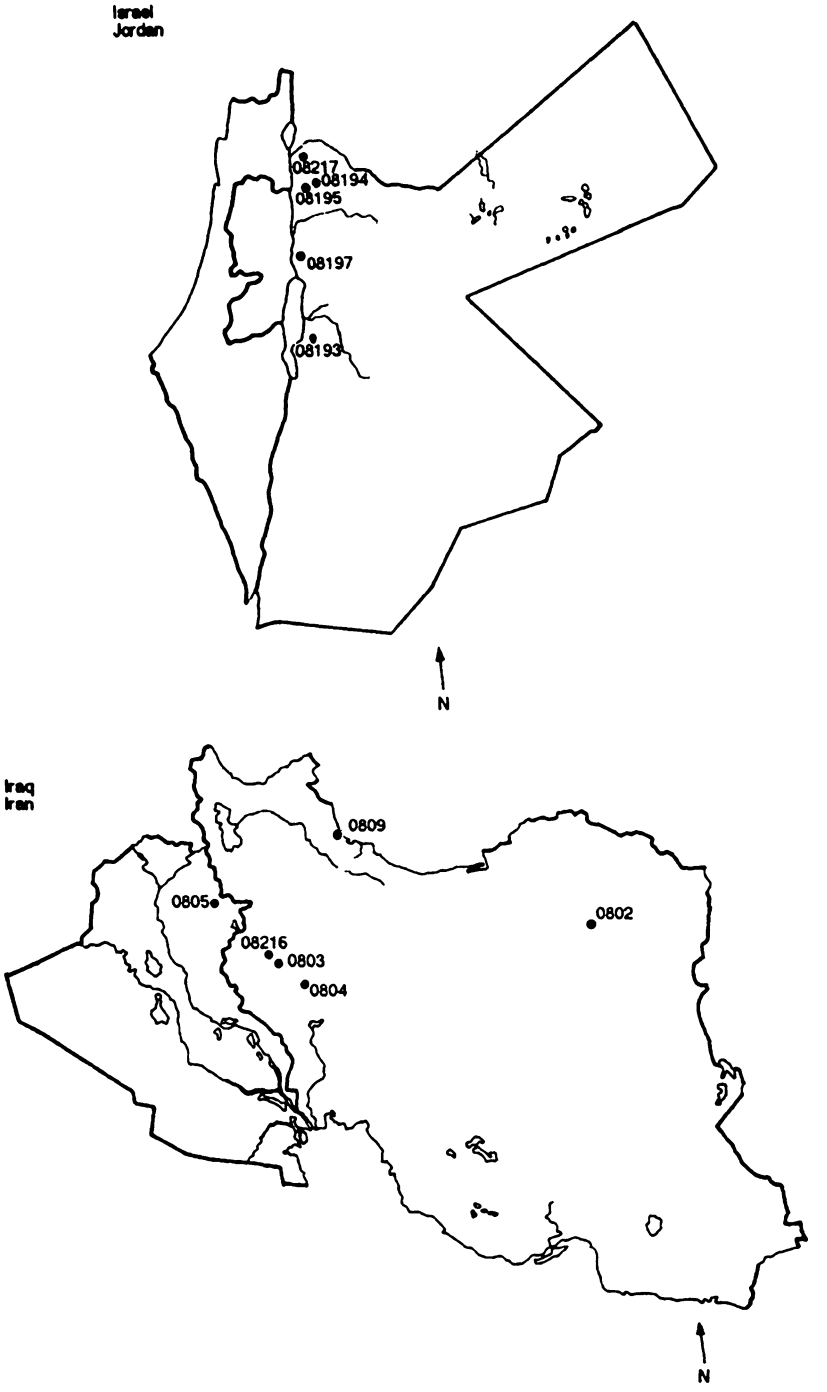
REG—Region (see Appendix 1, Variable RG); **CID**—Community number (where applicable); **HNUM**—House number; **NF**—Household is nuclear family? (0 = no; 1 = yes; 2 = irregular; 3 = probable; 4 = polygynous); **SEF**—Complex household (multiple generations, pooled household economy) (0 = no; 1 = yes; 2 = possible); **LEF**—Complex household (one generation, pooled household economy) (0 = no; 1 = yes; 2 = possible); **SF**—Complex household (multiple generations, not pooled economy) (0 = no; 1 = yes; 2 = possible); **LF**—Complex household (one generation, not pooled economy) (0 = no; 1 = yes; 2 = possible); **PL**—Household polygynous (0 = no; 1 = yes); **NFAM**—Number of families in household (0 = one person living alone); **NRES**—Number of residents in the house.

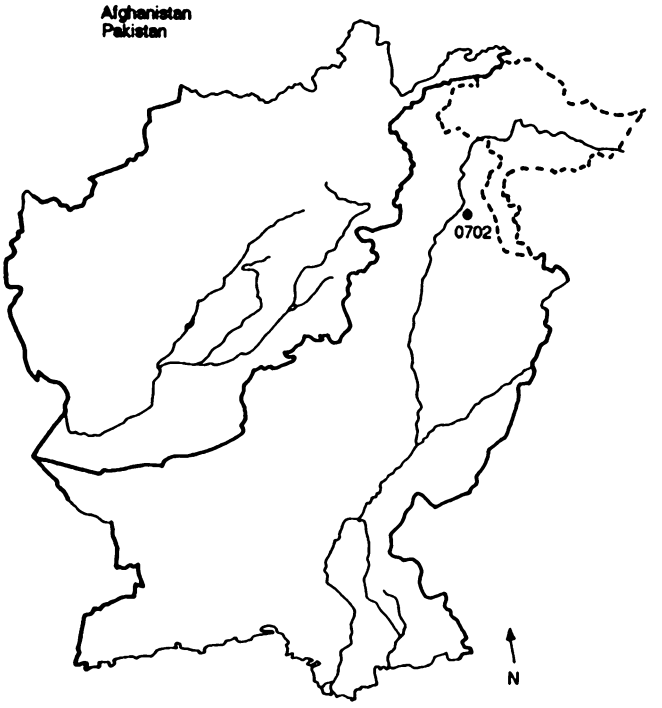
APPENDIX 3

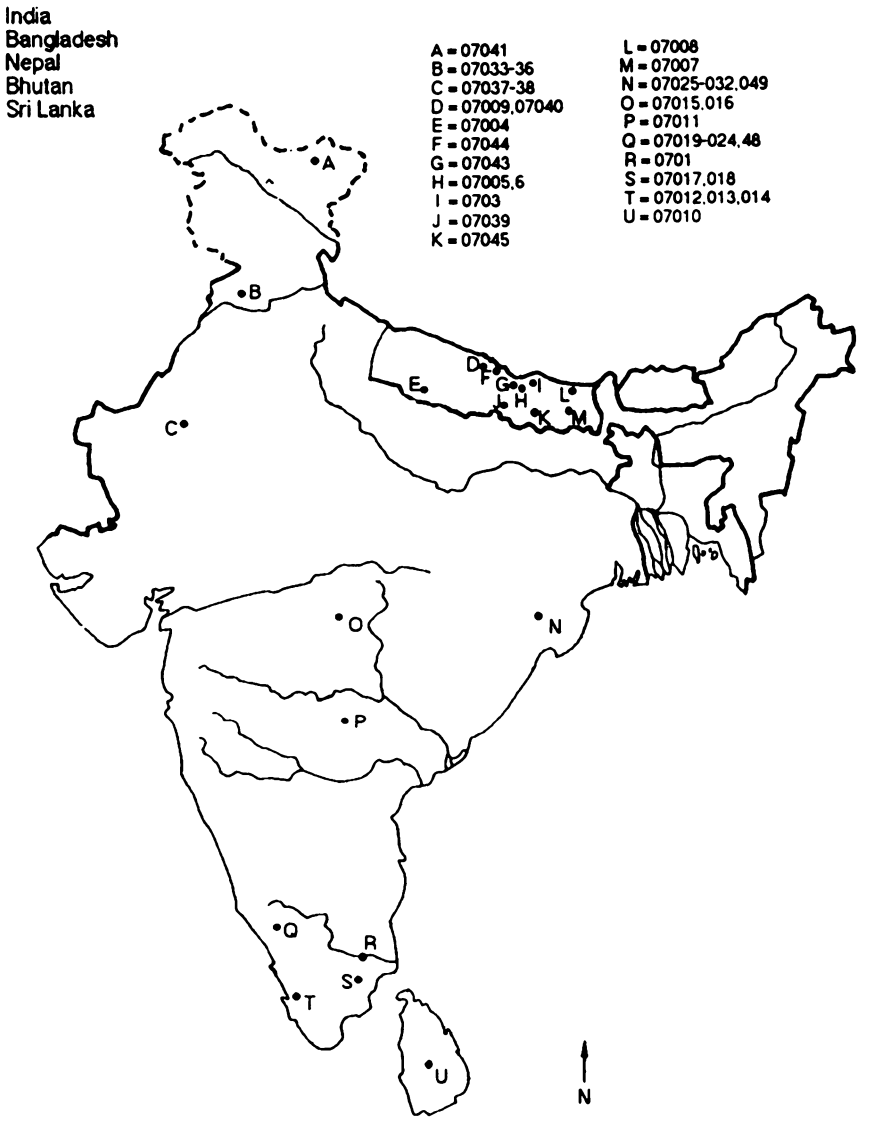
Maps showing locations of coded cases. Communities are four-digit numbers; houses are five-digit numbers. Houses coded from community sources are not indicated separately (see Appendix 2 to find correspondence between community numbers and house numbers).

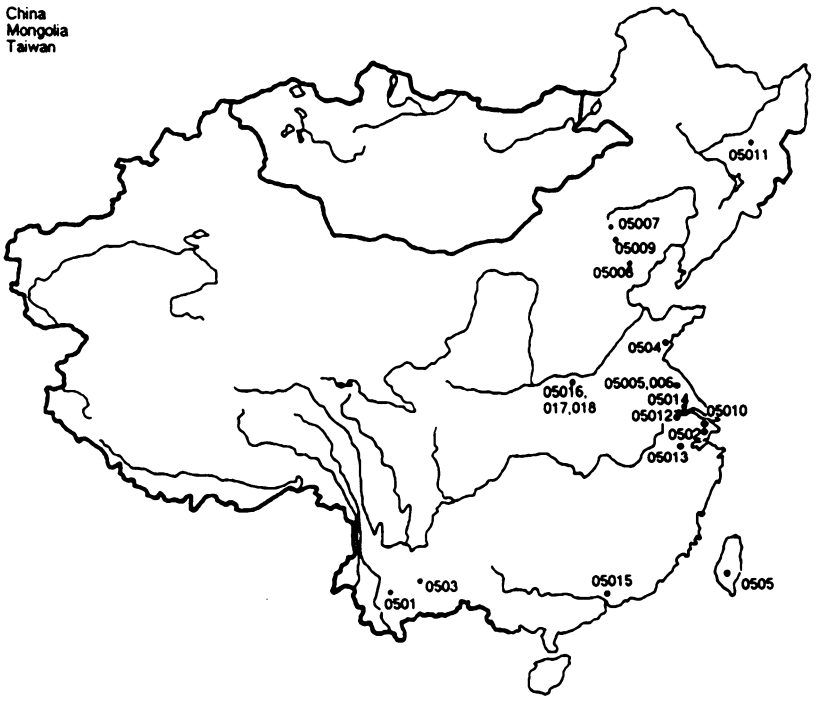


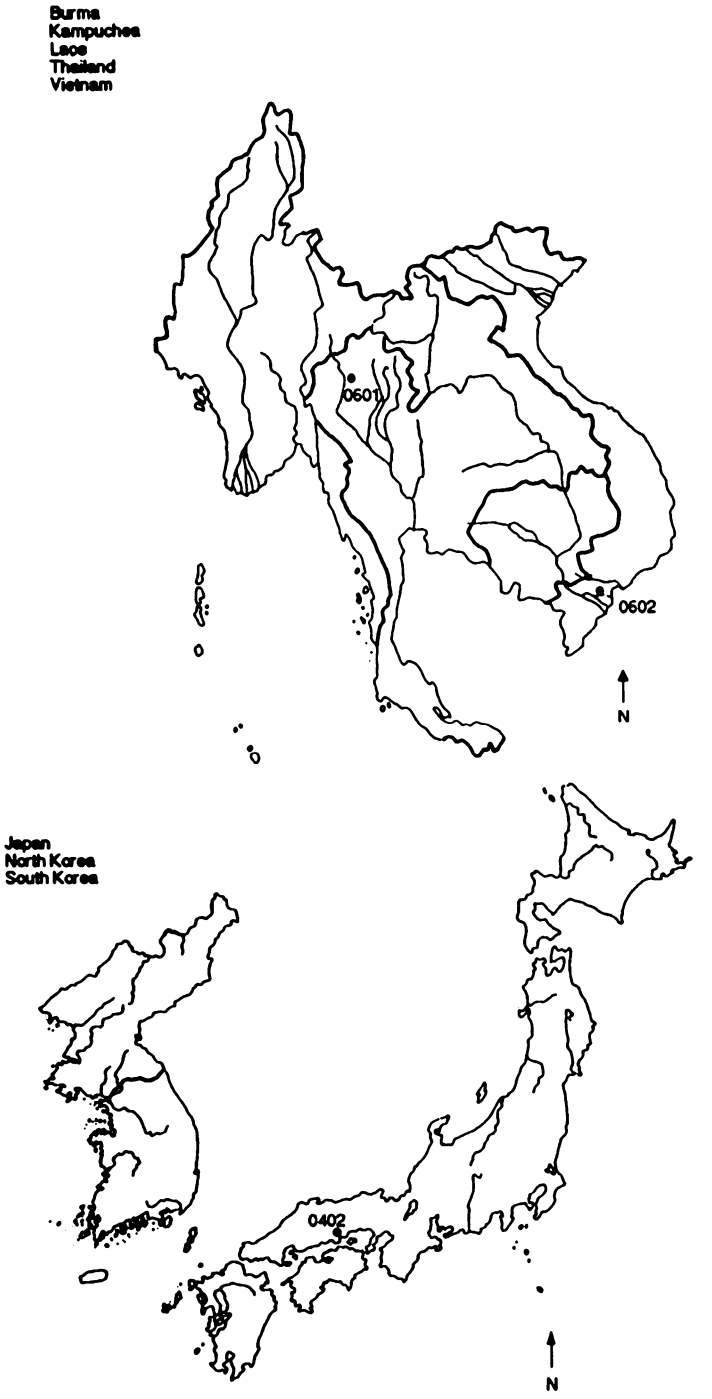

Saudi Arabia
Qatar
Bahrain
United Arab Emirates
People's Democratic Republic of Yemen
Yemen
Oman
08167-08172
N
Turkey
Syria
Cyprus
Lebanon
0801
08001
08002
0807
08173,174
08176-180
08003
0808
0805
08198-204
08196
N

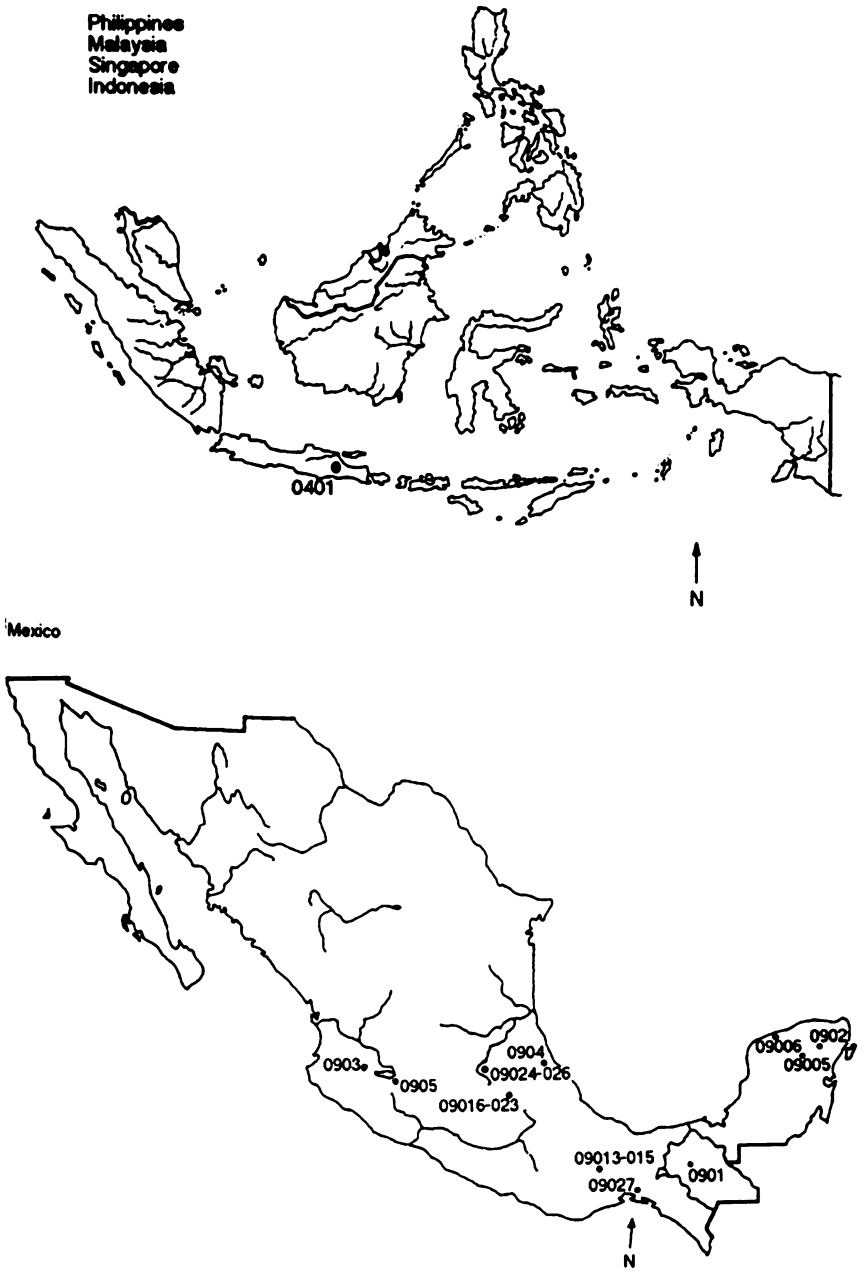

Israel
Jordan
08217
08194
08195
08197
08193
N
Iraq
Iran
0809
0805
08216
0803
0804
0802
N

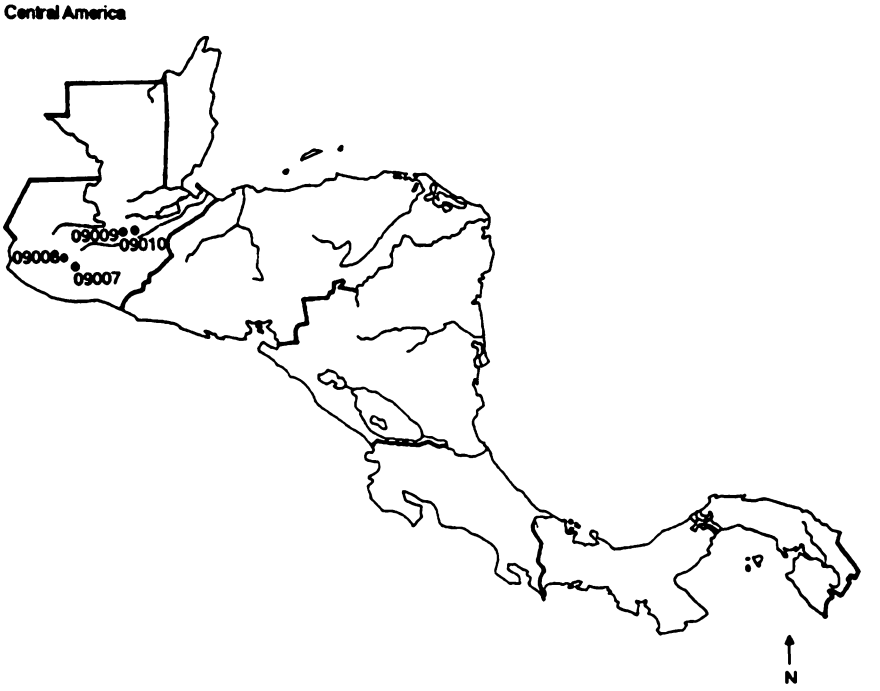

Afghanistan
Pakistan
0702
N


India
Bangladesh
Nepal
Bhutan
Sri Lanka
A = 07041
B = 07033-36
C = 07037-38
D = 07009,07040
E = 07004
F = 07044
G = 07043
H = 07005,6
I = 0703
J = 07039
K = 07045
L = 07008
M = 07007
N = 07025-032,049
O = 07015,016
P = 07011
Q = 07019-024,48
R = 0701
S = 07017,018
T = 07012,013,014
U = 07010
N


China
Mongolia
Taiwan
05011
05007
05009
05008
0504
05005,006
05014
05012
05010
05016,
017,018
0502
05013
0503
0501
05015
0505


Burma
Kampuchea
Laos
Thailand
Vietnam
0601
0602
N
Japan
North Korea
South Korea
0402
N


Philippines
Malaysia
Singapore
Indonesia
0401
N
Mexico
0903
0905
0904
09024-026
09016-023
09013-015
09027
0901
09006
0902
09005
N


Central America
09009
09010
09008
09007
N

APPENDIX 4

Bibliographic references and regional locations for the community sample (principal source first).

Insular Pacific

IP01—Tamansari—Jay 1969 (Java, near Modjokuto)
IP02—Niiike—Beardsley, Hall, and Ward 1959; Critchlow 1977 (Japan, southwest Honshu Island, Okayama Prefecture)

China

CH01—West Town—Hsu 1949 (Yunnan Province)
CH02—Kaihsienkung—Fei 1939 (Jiangsu, Lower Yangtze River)
CH03—Kao Yao—Osgood 1963 (Yunnan Province)
CH04—Taitou—Yang 1945 (Shandong Province)
CH05—Yen-liao—Cohen 1976 (South Taiwan)

Southeast Asia

SEA01—Chiangmai—Sulamith Potter 1977; Jack Potter 1976 (Northern Thailand)
SEA02—Khanh-Hau—Hickey 1964 (Southern Vietnam, Mekong Delta)

South Asia

SA01—Thyagasamuthiram—Sivertsen 1963 (Southern India, Tanjore District, Tamil Nadu)
SA02—Mohla—Eglar 1960 (Pakistan, Gujrat District, Punjab)
SA03—Mohoriya—Pignède 1966; MacFarlane 1976 (Gurung Region, Central Nepal)

Southwest Asia

SWA01—Hasanoğlan—Yasa 1957 (Turkey, Inner Anatolia)
SWA02—Baghestan—Horne 1980a,b, 1988; Martin 1980a,b (Northeast Iran, Semnan Province, Tauran Plain)

SWA03—Hasanabad—Watson 1979 (Western Iran, Kermanshahan Ostan, Lakistan)
SWA04—Aliabad—Kramer 1982 (Zagros, Iranian Kurdistan, Hamadān province)
SWA05—Dokan Dam Area—Hansen 1961 (Eastern Iraq, Kurdistan)
SWA06—Darnaj—Kamp 1982, 1987 (Eastern Syria)
SWA07—Alişar—Morrison 1939 (Central Anatolia, Turkey, Kanak Su Basin)
SWA08—Tell Ṭoqaan—Sweet 1960 (Northwestern Syria)
SWA09—Gilân Region—Bromberger 1974, 1986; Bazin, Bromberger, Askari, and Karimi 1982 (Northwestern Iran, Âzarbâjân)

Mesoamerica

MS001—Zinacantan—Vogt 1969; Warfield 1963, 1966 (Mexico, Central Chiapas)
MS002—Chan Kom—Redfield and Villa Rojas 1962 (Mexico, Eastern Yucatan)
MS003—Cherán—Beals 1946; Beals, Carrasco, and McCorkle 1944 (Mexico, Michoacán, Sierra Tarascan)
MS004—Tajin—Kelly and Palerm 1952; Harvey and Kelly 1969 (Mexico, Veracruz, Totonac Region)
MS005—Tzintzuntzan—Foster 1948 (Mexico, Michoacán, Lake Patzcuaro)

APPENDIX 5

Bibliographic references for the house sample. Regional locations are indicated for houses not from the community sample (community sample locations are indicated in Appendix 4).

IP001—Jay 1969—Figure 4.1, upper
IP002—Jay 1969—Figure 4.1, lower
CH001—Hsu 1949—Figure on p. 42
CH002—Hsu 1949—Figure on pp. 36 and 297 ('CH' house)
CH003—Hsu 1949—Figure on pp. 31 and 293 ('C' house)
CH004—Hsu 1949—Figure on pp. 35 and 295 ('Y' house)
CH005—Liu Dunzhen 1980—Figure 44 (Jiangsu Province)
CH006—Liu Dunzhen 1980—Figure 45 (Jiangsu Province)
CH007—Liu Dunzhen 1980—Figure 49 (Autonomous Region of Inner Mongolia)
CH008—Liu Dunzhen 1980—Figure 56 (Xinglong, Province of Hebei)
CH009—Liu Dunzhen 1980—Schema 3, p. 97 (Northern Hebei?)
CH010—Liu Dunzhen 1980—Figure 57 (Songjiang, Jiangsu Province)
CH011—Liu Dunzhen 1980—Figure 58 (Heilongjiang Province)
CH012—Liu Dunzhen 1980—Figure 63 (Zhenjiang, Jiangsu Province)
CH013—Liu Dunzhen 1980—Figure 64 (Hangzhou, Zhejiang Province)
CH014—Liu Dunzhen 1980—Figure 69 (Jiangsu Province)
CH015—Liu Dunzhen 1980—Figure 70 (village near Canton)
CH016—Liu Dunzhen 1980—Figure 121 (Henan Province)
CH017—Liu Dunzhen 1980—Figure 122 (Henan Province)
CH018—Liu Dunzhen 1980—Figures 123, 124, Schema 11 (Henan Province)
CH019—Myron Cohen 1976—"Yeh A" Compound, Figure 4
SEA001—Sulamith Potter 1977—Figures 4 and 5
SEA002—Jack Potter 1976—Figure 1
SEA003—Hickey 1964—Figure 3
SEA004—Hickey 1964—Figure 5
SEA005—Hickey 1964—Figure 8
SEA006—Hickey 1964—Figure 10
SEA007—Hickey 1964—Figure 13
SA001—Sivertsen 1963—Figure on p. 48

SA002—Sivertsen 1963—Figure on p. 50
SA003—Sivertsen 1963—Figure on p. 52
SA004—Milliet-Mondon 1982—Figures 4–7; 1981—Figure 9 (Tharu, Dang Valley, Terai, Southern Nepal)
SA005—Milliet-Mondon 1982—Figures 8–12 (Siklis Region, Gurung, Central Nepal)
SA006—Milliet-Mondon 1982—Figures 11, 12 (Siklis Region, Gurung, Central Nepal)
SA007—Milliet-Mondon 1982—Figures 14, 15 (Tamang, Timalbesi Region, Nepal)
SA008—Milliet-Mondon 1982—Figure 18 (Sherpa, Khumbu Region, Nepal)
SA009—Milliet-Mondon 1982—Figures 20, 21 (Thakali, Thak Region, Northwestern Nepal)
SA010—MacDougall and MacDougall 1977—(Rangama, Kandyan Region, Central Sri Lanka)
SA011—1961 Census of India, following p. 43—(Andhra Pradesh, Hyderabad District)
SA012—1961 Census of India, following p. 116—"high-class house" (Kerala)
SA013—1961 Census of India, following p. 116—"poor-class house" (Kerala)
SA014—1961 Census of India, following p. 116—"middle-class house" (Kerala)
SA015—1961 Census of India, following p. 124—"house of a rich person, Tilaibhat" (Madhya Pradesh)
SA016—1961 Census of India, following p. 124—"house of a rich person" (Madhya Pradesh)
SA017—1961 Census of India, following p. 132—"well-to-do Senguntha Mudallar" (Tamil Nadu)
SA018—1961 Census of India, following p. 132—"Valluva Pandarum hut" (Tamil Nadu)
SA019—1961 Census of India, following p. 156—"A house at Molahalli village" (Karnataka)
SA020—1961 Census of India, following p. 156—"Coondapur, plan of a thatched hut" (Karnataka)

SA021—1961 Census of India, following p. 156—"Banavasi village" (Karnataka)
SA022—1961 Census of India, following p. 156—"Kenchanagudda village" (Karnataka)
SA023—1961 Census of India, following p. 156—"Holalu village" (Karnataka)
SA024—1961 Census of India, following p. 156—"Holalu village" (Karnataka)
SA025—1961 Census of India, following p. 163—"A typical house" (Orissa)
SA026—1961 Census of India, following p. 163—(no label) (Orissa)
SA027—1961 Census of India, following p. 163—"House of Timankumar" (Orissa)
SA028—1961 Census of India, following p. 163—"House of a Kamar" (Orissa)
SA029—1961 Census of India, following p. 163—"Houses of Pandru Majhi" (Orissa)
SA030—1961 Census of India, following p. 163—"A typical Nolia house" (Orissa)
SA031—1961 Census of India, following p. 163—"House of a Bhuiya" (Orissa)
SA032—1961 Census of India, following p. 163—"House of a Rautia" (Orissa)
SA033—1961 Census of India, following p. 175—"House of a Sepoy" (Punjab)
SA034—1961 Census of India, following p. 175—"House of the Lambardar and Panch of the village" (Punjab)
SA035—1961 Census of India, following p. 175—"House of a casual laborer" (Punjab)
SA036—1961 Census of India, following p. 175—"House of a small tenant farmer" (Punjab)
SA037—1961 Census of India, following p. 185—(house with covered seat) (Rajasthan)
SA038—1961 Census of India, following p. 185—"The only two-storied house in the village" (Rajasthan)
SA039—Gaborieau 1981, pp. 35–57—(Kaligandaki Region, Central Nepal)

SA040—Morillon and Thouveny 1981—Figures 8–10 (Thakali Region, Taglung village, Nepal)
SA041—Murdoch 1981—Figures 5, 6 (Ladakh, Indian States of Jammu and Kashmir)
SA042—Blair 1983, pp. 23–25—(Budbudi village, Tharu, Southwestern Nepal)
SA043—Blair 1983, pp. 37–41—(Kodgaon, Gurung Region, Nepal)
SA044—Blair 1983, pp. 49–53—(Marpha, Panchgaon Region, Nepal)
SA045—Blair 1983, pp. 55–67—(Satungal, Newar Region, Nepal)
SA046—Pignède 1966—Figure 8, Maison no. 77 (Mohoriya village, Gurung Region, Central Nepal)
SA047—Pignède 1966—Figure 8, Maison no. 2 (Mohoriya village, Gurung Region, Central Nepal)
SA048—1961 Census of India, following p. 156—"Kenchanagudda village" (Karnataka)
SA049—1961 Census of India, following p. 163—"Bhumij house" (Orissa)
SWA001—Yasa 1957—"One-story house"
SWA002—Yasa 1957—"Two-story house"
SWA003—Oliver 1987, pp. 135–136—(Kütahya Province, Western Turkey)
SWA004—Horne 1988—H2
SWA005—Horne 1988—H3
SWA006—Horne 1988—H4 and H5
SWA007—Horne 1988—H7
SWA008—Horne 1988—H8
SWA009—Horne 1988—H9
SWA010—Horne 1988—H10
SWA011—Horne 1988—H11
SWA012—Horne 1988—H12
SWA013—Horne 1988—H13
SWA014—Horne 1988—H14
SWA015—Horne 1988—H15
SWA016—Horne 1988—H16
SWA017—Horne 1988—H17
SWA018—Horne 1988—H18
SWA019—Horne 1988—H19

SWA020—Horne 1988—H20
SWA021—Horne 1988—H22
SWA022—Horne 1988—H23
SWA023—Horne 1988—H24
SWA024—Horne 1988—H25
SWA025—Horne 1988—H26
SWA026—Horne 1988—H27
SWA027—Horne 1988—H28
SWA028—Horne 1988—H29
SWA029—Horne 1988—H30
SWA030—Horne 1988—H31
SWA031—Horne 1988—H32
SWA032—Horne 1988—H33
SWA033—Horne 1988—H34
SWA034—Watson 1979—Household 1
SWA035—Watson 1979—Household 2
SWA036—Watson 1979—Household 4
SWA037—Watson 1979—Household 5
SWA038—Watson 1979—Household 6
SWA039—Watson 1979—Household 7
SWA040—Watson 1979—Household 8
SWA041—Watson 1979—Household 9
SWA042—Watson 1979—Household 10
SWA043—Watson 1979—Household 11
SWA044—Watson 1979—Household 12
SWA045—Watson 1979—Household 13
SWA046—Watson 1979—Household 14
SWA047—Watson 1979—Household 15
SWA048—Watson 1979—Household 16
SWA049—Watson 1979—Household 17
SWA050—Watson 1979—Household 19
SWA051—Watson 1979—Household 20
SWA052—Watson 1979—Household 22
SWA053—Watson 1979—Household 23
SWA054—Watson 1979—Household 24
SWA055—Watson 1979—Household 25
SWA056—Watson 1979—Household 27

SWA057—Watson 1979—Household 29
SWA058—Watson 1979—Household 30
SWA059—Watson 1979—Household 32
SWA060—Watson 1979—Household 33
SWA061—Watson 1979—Household 34
SWA062—Watson 1979—Household 35
SWA063—Watson 1979—Household 36
SWA064—Watson 1979—Household 37
SWA065—Watson 1979—Household 38
SWA066—Watson 1979—Household 39
SWA067—Watson 1979—Household 44
SWA068—Watson 1979—Household 3
SWA069—Kramer 1982—Household 1
SWA070—Kramer 1982—Household 2
SWA071—Kramer 1982—Household 3
SWA072—Kramer 1982—Household 3a
SWA073—Kramer 1982—Household 4
SWA074—Kramer 1982—Household 5
SWA075—Kramer 1982—Household 6
SWA076—Kramer 1982—Household 7
SWA077—Kramer 1982—Household 8
SWA078—Kramer 1982—Household 9
SWA079—Kramer 1982—Household 10
SWA080—Kramer 1982—Household 11
SWA081—Kramer 1982—Household 12
SWA082—Kramer 1982—Household 13
SWA083—Kramer 1982—Household 14
SWA084—Kramer 1982—Household 15
SWA085—Kramer 1982—Household 16
SWA086—Kramer 1982—Household 17
SWA087—Kramer 1982—Household 18
SWA088—Kramer 1982—Household 19
SWA089—Kramer 1982—Household 20
SWA090—Kramer 1982—Household 21
SWA091—Kramer 1982—Household 22/24
SWA092—Kramer 1982—Household 23
SWA093—Kramer 1982—Household 25

SWA094—Kramer 1982—Household 26/27
SWA095—Kramer 1982—Household 28
SWA096—Kramer 1982—Household 29/30
SWA097—Kramer 1982—Household 31/32
SWA098—Kramer 1982—Household 33
SWA099—Kramer 1982—Household 34
SWA100—Kramer 1982—Household 35/36
SWA101—Kramer 1982—Household 37/38
SWA102—Kramer 1982—Household 39
SWA103—Kramer 1982—Household 40
SWA104—Kramer 1982—Household 41/42
SWA105—Kramer 1982—Household 43
SWA106—Kramer 1982—Household 44/45
SWA107—Kramer 1982—Household 46
SWA108—Kramer 1982—Household 47
SWA109—Kramer 1982—Household 48
SWA110—Kramer 1982—Household 49
SWA111—Kramer 1982—Household 50–52
SWA112—Kramer 1982—Household 53
SWA113—Kramer 1982—Household 54–56
SWA114—Kramer 1982—Household 57
SWA115—Kramer 1982—Household 58
SWA116—Kramer 1982—Household 59
SWA117—Kramer 1982—Household 60
SWA118—Kramer 1982—Household 61
SWA119—Kramer 1982—Household 62
SWA120—Kramer 1982—Household 63
SWA121—Kramer 1982—Household 64
SWA122—Kramer 1982—Household 65/66
SWA123—Kramer 1982—Household 67
SWA124—Kramer 1982—Household 68/69
SWA125—Kramer 1982—Household 70
SWA126—Kramer 1982—Household 71
SWA127—Kramer 1982—Household 72
SWA128—Kramer 1982—Household 73
SWA129—Kramer 1982—Household 74
SWA130—Kramer 1982—Household 75/76

SWA131—Kramer 1982—Household 77/78
SWA132—Kramer 1982—Household 79/80
SWA133—Kramer 1982—Household 81
SWA134—Kramer 1982—Household 82
SWA135—Kramer 1982—Household 83
SWA136—Hansen 1961—Sheikh Taifur's house, Topzawa
SWA137—Hansen 1961—Small house in Balkha, p. 38
SWA138—Kamp 1982—Compound 9
SWA139—Kamp 1982—Compound 10
SWA140—Kamp 1982—Compound 11
SWA141—Kamp 1982—Compound 12
SWA142—Kamp 1982—Compound 13
SWA143—Kamp 1982—Compound 14
SWA144—Kamp 1982—Compound 15
SWA145—Kamp 1982—Compound 18
SWA146—Kamp 1982—Compound 21
SWA147—Kamp 1982—Compound 30
SWA148—Morrison 1939—Complex E, house of Memet Efendi
SWA149—Jaritz 1973—House A1 (Egyptian Nubia, Fedija Region)
SWA150—Jaritz 1973—House A2 (Egyptian Nubia, Fedija Region)
SWA151—Jaritz 1973—House A3 (Egyptian Nubia, Fedija Region)
SWA152—Jaritz 1973—House A4 (Egyptian Nubia, Fedija Region)
SWA153—Jaritz 1973—House B1 (Egyptian Nubia, Kenuzi Region)
SWA154—Jaritz 1973—House B2 (Egyptian Nubia, Kenuzi Region)
SWA155—Jaritz 1973—House B3 (Egyptian Nubia, Kenuzi Region)
SWA156—Jaritz 1973—House B4b (labeled as B4 on p. 58) (Egyptian Nubia, Kenuzi Region)
SWA157—Jaritz 1973—House B4a (labeled as B4b on p. 58) (Egyptian Nubia, Kenuzi Region)
SWA158—Jaritz 1973—House B5a (Egyptian Nubia, Kenuzi Region)
SWA159—Jaritz 1973—House B5b (Egyptian Nubia, Kenuzi Region)
SWA160—Jaritz 1973—House B6 (Egyptian Nubia, Kenuzi Region)
SWA161—Jaritz 1973—House B7 (Egyptian Nubia, Kenuzi Region)
SWA162—Varanda 1982, p. 23—cave dwelling, Khubban (Yemen)
SWA163—Varanda 1982, p. 26—the "watch-tower"
SWA164—Varanda 1982, p. 27—"U-shaped house in al-Khawa" (Yemen)

SWA165—Varanda 1982, p. 235—"house of the main branch of the family" (Yemen)
SWA166—Varanda 1982, p. 200—"rural house," al-Mawra Khubban (Yemen)
SWA167—Varanda 1982, p. 29—al-Ajradi (Yemen)
SWA168—Varanda 1982, p. 28—al-Janad, "poor house" (Yemen)
SWA169—Varanda 1982, p. 28—al-Janad, "potter's house" (Yemen)
SWA170—Varanda 1982, p. 28—al-Janad, "poor house" (Yemen)
SWA171—Varanda 1982, p. 28—al-Janad, "poor house" (Yemen)
SWA172—Varanda 1982, p. 28—al-Janad, "poor house" (Yemen)
SWA173—Koyunlu 1976—Ibrahim Tek House, Period 'A,' Plate 132 (Munzuroğlu-Elâziğ, Keban, Turkey)
SWA174—Koyunlu 1976—House of family Coşkun, Plates 134–136 (Keban, Turkey)
SWA175—Crary 1949—Figure 15 (Upper Egypt, Zeiniya Bahari, near Luxor)
SWA176—Hall, McBride, and Riddell 1973—House 1-C/5, p. 250 (Aşvan, Turkey)
SWA177—Hall, McBride, and Riddell 1973—House 4, p. 253 (Aşvan, Turkey)
SWA178—Hall, McBride, and Riddell 1973—House 5, p. 254 (Aşvan, Turkey)
SWA179—Hall, McBride, and Riddell 1973—House 6, p. 256 (Aşvan, Turkey)
SWA180—Hall, McBride, and Riddell 1973—House 7, p. 258 (Aşvan, Turkey)
SWA181—Shafie 1989—Figure 3, upper left (Lower Egypt, Dakahlia)
SWA182—Shafie 1989—Figure 3, upper right (Lower Egypt, Nageer village)
SWA183—Shafie 1989—Figure 3, lower left (Lower Egypt)
SWA184—Shafie 1989—Figure 3, lower right (Lower Egypt, Sehregt village)
SWA185—Shafie 1989—Figure 4, top (Egypt, Fayoum region, Elsunbat village)
SWA186—Shafie 1989—Figure 4, bottom left (Egypt, Fayoum region)
SWA187—Shafie 1989—Figure 4, bottom right (Egypt, Fayoum region)

SWA188—Shafie 1989—Figure 5, top left (Upper Egypt, Souhag, Nayera village)
SWA189—Shafie 1989—Figure 5, top right
SWA190—Shafie 1989—Figure 5, bottom left
SWA191—Shafie 1989—Figure 5, bottom center (Upper Egypt, Souhag, Rawafea Elkassir)
SWA192—Shafie 1989—Figure 5, bottom right
SWA193—Khammash 1986, p. 23—(near Hmūd, Jordan)
SWA194—Khammash 1986, p. 36—(Samad, Northern Jordan)
SWA195—Khammash 1986, p. 67—(Tibneh, Northern Jordan)
SWA196—El-Khoury 1975—Figure on p. 5 (Bekaa Region, Lebanon)
SWA197—Layne 1987—Figure 7.4 (Jordan Valley, recently sedentized 'Abbad tribes)
SWA198—Ragette 1980—Example E1 (Lebanon, near Baalbek)
SWA199—Ragette 1980—Example E3 (Lebanon)
SWA200—Ragette 1980—Example E4 (Lebanon)
SWA201—Ragette 1980—Example E23 (Lebanon)
SWA202—Ragette 1980—Example E36 (Lebanon)
SWA203—Ragette 1980—Example E51 (Lebanon)
SWA204—Ragette 1980—Example E52 (Lebanon)
SWA205—Lozach and Hug 1930, p. 28—Figure 1 (Lower Egypt)
SWA206—Lozach and Hug 1930, p. 28—Figure 2 (Lower Egypt)
SWA207—Lozach and Hug 1930, p. 124—Figure 2 (Middle Egypt)
SWA208—Lozach and Hug 1930, p. 124—Figure 3 (Middle Egypt)
SWA209—Lozach and Hug 1930, p. 126—Figure 4 (Middle Egypt)
SWA210—Lozach and Hug 1930, p. 127—Figure 5 (Egypt, Fayoum Region)
SWA211—Lozach and Hug 1930, p. 129—Figure 6 (Middle Egypt)
SWA212—Lozach and Hug 1930, p. 132—Figure 7 (Upper Egypt, Aswan)
SWA213—Lozach and Hug 1930, p. 133—Figure 8 (Upper Egypt)
SWA214—Lozach and Hug 1930, p. 135—Figure 9 (Upper Egypt)
SWA215—Lozach and Hug 1930, p. 135—Figure 10 (Upper Egypt, Aswan)
SWA216—Watson 1979—Figure 8.1 (Western Iran, Shirdasht, Kermanshahan Ostan, Lakistan, winter camp of goat and sheep herders)

SWA217—Shami 1989—Figure 10, "Malkawi house" (Umm Qeis, Jordan, late 19th century)
SWA218—Bromberger 1986—Figures 5g and 13g
SWA219—Bromberger 1986—Figures 2h, 5c, 13c
SWA220—Bromberger 1986—Figures 2j, 5d, 13b
MS0001—Vogt 1969—Figure 32; Warfield ms., Plan 7, Plan 2
MS0002—Vogt 1969—Figure 33; Warfield ms., Plan 8, Plan 2
MS0003—Wauchope 1938—Figure 47a, House 3 (Chan Kom, Yucatan, Mexico)
MS0004—Wauchope 1938—Figure 47b, Figure 11, House 2 (Chan Kom, Yucatan, Mexico)
MS0005—Wauchope 1938—Figure 24 (Piste, Yucatan, Mexico)
MS0006—Wauchope 1938—Figure 25 (Techac Pueblo, Northwestern Yucatan, Mexico)
MS0007—Wauchope 1938—Figure 26 (Santiago Atitlan, Guatemala)
MS0008—Wauchope 1938—Figure 29 (San Pedro de Laguna, Guatemala)
MS0009—Wauchope 1938—Figure 34 (San Cristobal, Guatemala)
MS0010—Wauchope 1938—Figure 38 (Coban, Guatemala)
MS0011—Kelly and Palerm 1952—Map 9, pp. 204–207
MS0012—Foster 1948—Figure 4
MS0013—Sutro 1983; Sutro and Downing 1986—Solar 6A-5 (1981) (Diaz Ordaz, Oaxaca, Mexico)
MS0014—Sutro 1983; Sutro and Downing 1986—Solar 13-5 (1981) (Diaz Ordaz, Oaxaca, Mexico)
MS0015—Sutro 1983; Sutro and Downing 1986—Solar 42-6 (1981) (Diaz Ordaz, Oaxaca, Mexico)
MS0016—Charlton 1970—Figure 1 (Mexico, Teotihuacan Valley, Cerro Gordo North Slope)
MS0017—Charlton 1970—Figure 2 (Mexico, Teotihuacan Valley, Cerro Gordo North Slope)
MS0018—Charlton 1970—Figure 3 (Mexico, Teotihuacan Valley, Cerro Gordo North Slope)
MS0019—Charlton 1970—Figure 4 (Mexico, Teotihuacan Valley, Cerro Gordo North Slope)
MS0020—Charlton 1970—Figure 5 (Mexico, Teotihuacan Valley, Cerro Gordo North Slope)

MS0021—Charlton 1970—Figure 6 (Mexico, Teotihuacan Valley, Cerro Gordo North Slope)
MS0022—Charlton 1970—Figure 10 (Mexico, Teotihuacan Valley, Cerro Gordo North Slope)
MS0023—Charlton 1970—Figure 11 (Mexico, Teotihuacan Valley, Cerro Gordo North Slope)
MS0024—Manrique C. 1969—Figure 11a–c (Mexico, Otomi, Mision de los Chichimecos)
MS0025—Manrique C. 1969—Figure 11d,e (Mexico, Otomi, near Toluca)
MS0026—Manrique C. 1969—Figure 17b (Mexico, Otomi, Hidalgo, Valle de Mezquital)
MS0027—Diebold 1969—Figure 6 (Mexico, Isthmus of Tehuantepec, Huave Region)

APPENDIX 6

	REG	HNUM	NAA	SQMAA	NG	EG	HL	CA	AC	TS	SA	SI
1	IP	1	6	41	8	9	4	3	5	2	0	3
2	IP	2	10	182	12	15	5	6	8	2	2	7
3	CH	1	4	45	6	5	3	0	2	1	1	2
4	CH	2	21	252	24	27	8	6	12	5	5	13
5	CH	3	37	444	39	47	9	13	18	7	11	23
6	CH	4	56	672	65	101	6	40	34	19	•	31
7	CH	5	2	30	3	2	2	0	1	0	0	1
8	CH	6	3	34	4	3	2	0	2	0	1	2
9	CH	7	1	24	3	2	2	0	1	0	0	0
10	CH	8	3	•	6	5	3	0	3	0	0	0
11	CH	9	11	•	20	19	4	0	5	1	2	2
12	CH	10	7	105	8	7	3	0	5	0	2	5
13	CH	11	5	52	6	6	3	1	3	0	0	•
14	CH	12	4	50	5	4	3	0	2	0	0	3
15	CH	13	7	90	10	9	5	0	0	2	0	5
16	CH	14	6	96	9	9	4	1	3	2	1	4
17	CH	15	6	82	8	8	4	1	4	1	0	4
18	CH	16	4	15	5	4	2	0	2	0	0	•
19	CH	17	20	127	23	22	5	0	9	3	0	•
20	CH	18	11	205	19	18	4	0	11	3	•	•
21	CH	19	70	560	91	99	6	9	37	20	26	34
22	SEA	1	13	222	29	34	10	0	15	11	4	10
23	SEA	2	8	66	10	22	0	5	6	5	4	9
24	SEA	3	4	50	7	7	3	1	2	1	0	2
25	SEA	4	3	100	5	5	3	1	2	1	0	1
26	SEA	5	4	120	6	7	4	3	4	2	0	1
27	SEA	6	5	166	7	0	4	3	5	2	0	2
28	SEA	7	5	112	7	9	4	4	5	2	0	2
29	SA	1	12	167	18	20	5	3	11	5	0	4
30	SA	2	7	152	12	12	5	1	7	3	1	4
31	SA	3	4	35	7	6	4	0	4	1	0	0
32	SA	4	11	140	14	13	5	0	6	3	5	5
33	SA	5	4	9	6	5	5	0	3	2	1	1
34	SA	6	8	185	11	10	7	0	7	3	4	3
35	SA	7	5	51	9	8	6	0	6	3	3	4
36	SA	8	4	80	7	6	6	0	3	3	1	1
37	SA	9	13	271	17	16	7	0	9	3	7	8
38	SA	10	3	24	5	4	3	0	2	1	0	0
39	SA	11	8	193	11	10	4	0	4	2	3	5
40	SA	12	8	•	9	10	3	3	3	2	1	•
41	SA	13	3	•	4	3	3	0	2	1	0	1
42	SA	14	7	•	8	9	3	2	5	1	•	2

	REG	NNUM	NRR	SOMRR	NG	EG	NL	CR	NC	TS	SR	SI
43	SR	15	14	•	19	•	4	•	13	6	5	9
44	SR	16	5	240	7	8	3	2	5	1	2	3
45	SR	17	12	350	13	13	6	1	8	6	1	4
46	SR	18	2	105	4	3	3	0	2	1	0	0
47	SR	19	18	447	21	•	9	•	•	5	•	•
48	SR	20	3	25	4	3	3	0	2	1	•	•
49	SR	21	6	75	6	6	4	1	4	2	•	1
50	SR	22	1	13	2	1	1	0	1	0	0	0
51	SR	23	1	11	2	1	1	0	1	0	0	0
52	SR	24	1	13	2	1	1	0	1	0	0	0
53	SR	25	3	21	4	3	2	0	2	1	0	1
54	SR	26	5	34	6	6	3	1	2	2	1	2
55	SR	27	3	20	4	3	3	0	2	1	0	0
56	SR	28	3	•	4	3	2	0	2	1	0	1
57	SR	29	5	44	6	6	4	1	4	1	1	2
58	SR	30	4	20	5	5	3	1	2	1	0	2
59	SR	31	3	32	4	4	2	0	2	1	0	0
60	SR	32	4	38	5	4	3	0	2	1	1	1
61	SR	33	2	33	4	3	2	0	3	0	1	1
62	SR	34	11	184	15	15	5	1	6	2	5	7
63	SR	35	1	26	2	1	1	0	1	0	0	0
64	SR	36	2	33	4	3	2	0	2	1	1	1
65	SR	37	3	50	5	•	2	•	2	1	•	0
66	SR	38	7	56	10	9	4	0	5	3	•	•
67	SR	39	5	45	9	8	6	0	4	4	0	1
68	SR	40	20	366	28	28	9	1	18	9	11	14
69	SR	41	12	200	18	18	7	2	14	5	5	8
70	SR	42	5	70	9	8	5	0	5	1	2	4
71	SR	43	6	66	9	8	5	0	4	3	4	4
72	SR	44	14	193	18	18	7	1	12	3	6	9
73	SR	45	18	114	14	16	7	3	12	5	2	2
74	SR	46	4	33	6	5	5	0	3	2	1	1
75	SR	47	5	76	8	7	5	0	4	3	1	1
76	SR	48	3	40	4	3	2	0	2	1	•	0
77	SR	49	2	38	3	2	2	0	1	1	0	0
78	SWR	1	6	•	8	8	6	1	5	2	3	3
79	SWR	2	12	•	15	17	4	4	9	5	3	6
80	SWR	3	8	•	10	9	5	0	5	2	2	3
81	SWR	4	9	68	8	7	3	0	4	2	5	7
82	SWR	5	9	•	6	5	2	0	2	1	5	5
83	SWR	6	10	55	6	5	2	0	2	1	6	6
84	SWR	7	8	•	7	7	3	1	4	1	5	5

	REG	RNUM	NRR	SQMRR	NG	EG	RL	CR	RC	TS	SR	SI
85	SUVA	8	2	13	3	2	2	0	1	1	1	1
86	SUVA	9	5	10	3	2	2	0	1	1	4	4
87	SUVA	10	5	60	6	5	2	0	3	1	3	3
88	SUVA	11	6	22	4	3	2	0	3	1	4	4
89	SUVA	12	9	52	7	6	3	0	4	1	5	6
90	SUVA	13	3	31	0	5	3	0	4	2	0	1
91	SUVA	14	7	50	7	6	3	0	2	2	0	0
92	SUVA	15	6	27	5	4	2	1	2	2	0	0
93	SUVA	16	5	46	7	6	3	0	3	2	0	0
94	SUVA	17	2	14	3	2	2	0	1	1	0	0
95	SUVA	18	2	18	4	3	3	0	2	1	0	0
96	SUVA	19	4	27	5	4	2	0	2	1	0	0
97	SUVA	20	3	22	5	4	2	0	2	1	0	0
98	SUVA	21	6	27	6	5	3	0	4	1	0	0
99	SUVA	22	2	22	4	3	2	0	2	1	0	0
100	SUVA	23	7	14	6	5	2	0	2	1	0	0
101	SUVA	24	2	23	5	4	2	0	2	1	0	0
102	SUVA	25	2	15	3	2	2	0	1	1	0	0
103	SUVA	26	6	28	5	4	2	0	2	1	0	0
104	SUVA	27	8	54	9	8	2	0	2	1	1	3
105	SUVA	28	4	34	5	4	2	0	2	1	0	0
106	SUVA	29	2	•	4	3	2	0	2	1	0	0
107	SUVA	30	2	30	5	4	2	0	2	1	0	0
108	SUVA	31	6	•	9	8	3	0	4	2	1	1
109	SUVA	32	5	•	7	6	2	0	2	1	1	1
110	SUVA	33	10	•	11	10	3	0	5	3	1	1
111	SUVA	34	6	•	9	8	3	•	•	2	3	3
112	SUVA	35	7	•	9	•	•	•	•	1	5	5
113	SUVA	36	7	82	10	9	5	0	6	3	3	3
114	SUVA	37	9	117	11	10	3	0	6	3	4	4
115	SUVA	38	4	•	•	•	•	•	•	1	3	3
116	SUVA	39	7	104	9	8	4	0	5	1	5	5
117	SUVA	40	5	54	7	6	3	0	2	2	2	2
118	SUVA	41	4	•	5	4	2	•	2	1	1	1
119	SUVA	42	6	•	8	•	•	•	•	1	3	3
120	SUVA	43	4	•	5	•	•	•	•	•	2	2
121	SUVA	44	8	•	8	•	•	•	•	2	4	4
122	SUVA	45	5	70	7	6	4	0	4	2	3	3
123	SUVA	46	11	152	15	•	5	1	•	4	6	6
124	SUVA	47	4	•	5	•	•	•	•	0	2	2
125	SUVA	48	4	23	8	7	6	0	5	3	1	1
126	SUVA	49	3	•	5	5	3	1	2	1	2	2

	REG	BNOM	NBR	SQMBR	NG	EG	ML	CR	BC	TS	SR	SI
127	SWA	50	6	41	9	9	3	1	5	2	3	3
128	SWA	51	9	127	12	12	3	1	6	2	6	6
129	SWA	52	4	•	5	4	1	•	•	0	2	2
130	SWA	53	6	62	8	7	3	0	5	1	4	4
131	SWA	54	1	•	2	•	1	•	1	0	0	0
132	SWA	55	2	•	5	•	2	•	2	1	1	1
133	SWA	56	4	•	7	•	4	•	•	3	1	1
134	SWA	57	3	•	5	4	2	•	•	1	1	1
135	SWA	58	6	•	5	•	•	•	•	1	2	2
136	SWA	59	8	55	10	9	4	0	6	2	5	4
137	SWA	60	3	•	5	•	2	•	•	1	2	2
138	SWA	61	3	•	5	•	2	•	•	1	1	1
139	SWA	62	2	•	3	•	1	•	•	0	1	1
140	SWA	63	6	51	9	9	5	1	6	3	3	3
141	SWA	64	5	•	4	•	2	•	•	1	•	•
142	SWA	65	8	•	10	•	5	•	•	2	4	3
143	SWA	66	7	•	7	•	•	•	•	2	3	3
144	SWA	67	2	24	4	3	3	•	•	1	0	0
145	SWA	68	8	•	12	•	4	•	•	5	3	0
146	SWA	69	16	117	19	19	7	1	13	4	8	10
147	SWA	70	7	•	11	•	•	•	•	3	3	2
148	SWA	71	9	•	12	•	•	•	•	2	6	3
149	SWA	72	•	•	•	•	•	•	•	•	1	•
150	SWA	73	4	•	•	•	•	•	•	•	1	•
151	SWA	74	7	•	•	•	•	•	•	•	2	1
152	SWA	75	7	•	9	8	4	0	4	2	3	4
153	SWA	76	4	•	8	•	•	•	•	3	2	3
154	SWA	77	6	•	8	•	•	•	•	3	3	4
155	SWA	78	6	•	10	•	•	•	•	4	4	4
156	SWA	79	7	•	13	•	•	•	•	4	4	4
157	SWA	80	7	•	10	•	•	•	•	3	•	•
158	SWA	81	7	•	10	•	3	•	•	2	4	4
159	SWA	82	6	•	8	7	3	0	4	2	1	3
160	SWA	83	7	•	12	•	4	•	•	4	3	4
161	SWA	84	7	•	11	•	3	•	•	3	3	5
162	SWA	85	10	•	14	•	4	•	•	3	5	6
163	SWA	86	13	•	15	•	4	•	•	3	7	9
164	SWA	87	8	•	12	•	5	•	•	3	5	5
165	SWA	88	6	•	9	•	•	•	•	1	3	5
166	SWA	89	6	•	7	•	3	•	•	2	2	4
167	SWA	90	4	•	8	•	3	•	•	1	3	3
168	SWA	91	15	•	19	•	5	•	•	4	•	•

	REG	NNOM	NRR	SOMRR	NG	EG	NL	CR	RC	TS	SR	SI
169	SUDA	92	12	•	12	•	3	•	•	2	•	•
170	SUDA	93	8	•	12	•	4	•	•	3	4	6
171	SUDA	94	8	•	11	•	5	•	•	4	4	6
172	SUDA	95	6	•	8	•	3	•	•	2	4	5
173	SUDA	96	7	•	8	•	3	•	•	2	•	•
174	SUDA	97	9	95	14	14	4	1	5	2	3	6
175	SUDA	98	5	•	7	6	3	0	2	1	3	5
176	SUDA	99	7	•	11	•	4	•	•	4	3	4
177	SUDA	100	9	•	14	•	•	•	•	3	3	4
178	SUDA	101	13	•	16	•	4	•	•	5	5	9
179	SUDA	102	8	•	15	•	•	•	•	3	5	6
180	SUDA	103	8	•	11	•	3	0	•	2	4	6
181	SUDA	104	8	•	10	•	4	•	•	2	3	3
182	SUDA	105	5	•	7	•	3	•	•	1	2	3
183	SUDA	106	11	•	15	•	4	•	•	4	•	•
184	SUDA	107	6	•	9	•	3	•	•	2	3	4
185	SUDA	108	13	•	16	•	3	•	•	2	7	10
186	SUDA	109	8	•	12	•	4	•	•	2	5	8
187	SUDA	110	5	•	7	•	4	1	•	2	2	2
188	SUDA	111	14	•	20	•	5	•	•	4	6	11
189	SUDA	112	9	•	12	•	4	1	•	3	7	8
190	SUDA	113	13	•	17	•	6	•	•	3	7	9
191	SUDA	114	5	•	8	•	3	0	•	3	1	2
192	SUDA	115	7	•	8	•	3	0	•	2	4	5
193	SUDA	116	7	•	10	•	4	•	•	3	4	5
194	SUDA	117	9	•	12	•	•	1	•	2	5	7
195	SUDA	118	4	20	6	5	4	0	4	2	2	2
196	SUDA	119	2	•	5	4	3	0	2	2	1	1
197	SUDA	120	6	•	10	•	4	•	•	3	2	3
198	SUDA	121	8	•	11	•	4	•	•	3	3	4
199	SUDA	122	6	•	9	•	•	•	•	3	2	2
200	SUDA	123	6	•	8	•	3	•	•	2	2	2
201	SUDA	124	8	•	10	•	4	•	•	2	5	6
202	SUDA	125	8	•	11	•	4	•	•	3	5	7
203	SUDA	126	5	•	7	7	4	1	5	2	2	3
204	SUDA	127	8	•	13	•	3	•	•	2	5	7
205	SUDA	128	6	•	8	8	3	1	4	1	4	5
206	SUDA	129	7	•	11	10	5	0	5	2	2	4
207	SUDA	130	22	•	28	•	4	•	•	•	•	•
208	SUDA	131	13	•	17	•	4	•	•	4	4	6
209	SUDA	132	16	•	19	•	6	•	•	3	•	•
210	SUDA	133	11	•	16	16	3	1	6	3	7	8

	REG	MNUM	NBR	SQMBR	NG	EG	NL	CR	AC	TS	SR	SI
211	SUVA	134	7	•	12	11	4	0	6	3	3	4
212	SUVA	135	14	135	18	20	5	4	11	4	7	9
213	SUVA	136	15	220	22	22	8	1	18	6	7	6
214	SUVA	137	2	•	4	3	2	0	2	1	1	1
215	SUVA	138	9	110	13	13	4	1	6	2	8	8
216	SUVA	139	8	92	16	17	3	3	6	3	6	7
217	SUVA	140	7	52	12	11	3	0	6	2	5	6
218	SUVA	141	8	123	11	11	3	1	4	2	6	5
219	SUVA	142	5	58	13	12	3	0	4	4	3	4
220	SUVA	143	9	114	14	14	3	1	8	4	5	7
221	SUVA	144	17	334	22	21	3	0	4	4	9	10
222	SUVA	145	4	86	6	6	2	0	2	1	2	2
223	SUVA	146	13	290	21	20	5	0	8	6	7	9
224	SUVA	147	6	76	10	9	3	0	4	2	5	4
225	SUVA	148	19	566	21	22	6	2	11	4	9	12
226	SUVA	149	12	444	15	14	4	0	7	4	3	5
227	SUVA	150	11	321	14	13	3	0	8	4	4	6
228	SUVA	151	10	188	15	14	6	0	10	5	2	7
229	SUVA	152	14	335	20	20	9	1	11	10	3	6
230	SUVA	153	5	150	8	9	4	3	4	2	0	•
231	SUVA	154	5	100	9	9	4	1	4	2	2	5
232	SUVA	155	5	150	9	9	3	1	4	1	2	2
233	SUVA	156	4	70	6	5	2	0	2	0	0	0
234	SUVA	157	3	55	5	4	2	0	2	0	1	1
235	SUVA	158	9	74	11	11	3	1	4	1	3	3
236	SUVA	159	9	160	12	12	5	1	8	2	3	4
237	SUVA	160	12	200	15	16	4	3	7	2	8	7
238	SUVA	161	8	125	10	10	3	1	2	1	3	3
239	SUVA	162	5	50	7	6	4	0	4	2	2	2
240	SUVA	163	19	102	27	26	7	0	13	7	5	7
241	SUVA	164	10	62	10	17	4	0	0	5	2	4
242	SUVA	165	20	273	33	22	12	0	19	10	12	10
243	SUVA	166	29	267	33	33	6	1	25	9	10	10
244	SUVA	167	8	80	15	14	6	0	10	5	4	4
245	SUVA	168	5	80	8	7	3	0	4	1	3	1
246	SUVA	169	4	36	5	5	2	1	2	0	2	3
247	SUVA	170	6	41	7	6	3	0	2	1	0	1
248	SUVA	171	10	100	11	10	5	0	4	1	4	4
249	SUVA	172	6	51	7	6	4	0	4	1	1	1
250	SUVA	173	5	100	8	7	4	0	7	3	2	3
251	SUVA	174	20	600	25	25	5	1	8	8	4	6
252	SUVA	175	4	53	7	6	4	0	4	3	2	2

	REG	NNUM	NAA	SQMAA	NB	EB	NL	CR	AC	TS	SR	SI
253	SWA	176	18	321	25	29	4	6	13	7	9	13
254	SWA	177	18	178	14	13	6	0	8	4	4	7
255	SWA	178	5	53	7	7	2	1	5	1	1	1
256	SWA	179	26	464	28	30	4	3	16	7	13	17
257	SWA	180	19	389	21	20	0	0	17	5	6	6
258	SWA	181	3	•	7	6	4	0	4	2	0	0
259	SWA	182	6	•	0	7	3	0	4	2	1	1
260	SWA	183	4	•	0	7	3	0	4	2	1	1
261	SWA	184	6	•	10	9	5	0	5	4	1	1
262	SWA	185	5	•	9	0	5	0	6	4	1	2
263	SWA	186	5	•	9	0	5	0	7	2	1	1
264	SWA	187	4	•	6	5	3	0	4	1	1	1
265	SWA	188	3	•	0	7	4	0	6	3	1	1
266	SWA	189	6	•	9	0	5	0	0	3	1	2
267	SWA	190	3	•	0	7	4	0	6	3	1	1
268	SWA	191	4	•	0	7	4	0	4	3	0	0
269	SWA	192	2	•	7	6	4	0	4	3	0	0
270	SWA	193	10	•	13	12	3	0	6	2	•	•
271	SWA	194	3	90	4	3	2	0	2	1	•	•
272	SWA	195	2	32	4	4	2	1	3	1	•	•
273	SWA	196	4	140	7	7	3	1	3	2	3	3
274	SWA	197	5	66	10	10	4	1	6	3	1	3
275	SWA	198	1	20	3	2	2	0	1	1	0	0
276	SWA	199	7	88	0	7	4	0	4	2	5	5
277	SWA	200	4	84	14	17	4	6	5	0	•	•
278	SWA	201	6	114	0	7	4	0	3	3	3	•
279	SWA	202	5	123	7	0	2	3	3	3	2	•
280	SWA	203	0	•	9	10	2	3	4	1	5	•
281	SWA	204	0	•	9	0	3	0	4	2	4	•
282	SWA	205	3	25	6	5	2	0	2	1	2	2
283	SWA	206	4	50	7	6	2	0	2	1	2	3
284	SWA	207	3	22	6	5	3	0	4	2	0	0
285	SWA	208	3	25	7	6	3	0	2	2	2	2
286	SWA	209	5	45	0	7	3	0	3	2	2	2
287	SWA	210	7	57	13	12	6	0	7	4	3	4
288	SWA	211	0	100	16	15	5	0	10	5	5	6
289	SWA	212	2	20	7	6	3	0	2	2	3	2
290	SWA	213	4	40	9	0	4	0	6	1	3	5
291	SWA	214	3	25	13	12	5	0	0	3	6	6
292	SWA	215	7	79	17	17	5	1	7	4	0	9
293	SWA	216	7	71	9	0	3	0	4	2	3	3
294	SWA	217	20	•	35	30	5	4	21	14	0	3

	REG	HNUM	NRR	SQMRA	NG	EG	HL	CR	AC	TS	SR	SI
295	SWA	218	13	333	18	19	6	3	12	7	1	1
296	SWA	219	5	77	7	6	3	0	2	2	3	2
297	SWA	220	7	91	9	9	3	5	5	2	2	4
298	MSO	1	3	68	7	7	2	1	2	1	3	3
299	MSO	2	3	•	7	7	3	1	3	3	0	0
300	MSO	3	4	110	6	5	2	0	2	1	2	2
301	MSO	4	2	53	5	5	4	1	2	2	1	1
302	MSO	5	1	20	3	3	2	1	1	1	•	0
303	MSO	6	1	23	3	3	2	1	1	1	•	0
304	MSO	7	2	17	4	3	2	0	2	1	•	0
305	MSO	8	2	20	4	3	3	0	2	2	•	0
306	MSO	9	2	39	4	4	3	1	2	2	•	0
307	MSO	10	3	35	5	5	3	1	3	2	•	0
308	MSO	11	6	125	9	10	3	2	4	1	2	3
309	MSO	12	10	182	12	11	4	0	6	3	1	4
310	MSO	13	5	82	8	7	3	0	5	2	1	4
311	MSO	14	6	168	10	9	3	0	4	3	4	5
312	MSO	15	15	299	19	19	3	1	7	3	10	3
313	MSO	16	5	38	7	6	2	0	2	1	1	1
314	MSO	17	5	28	7	6	3	0	4	1	0	0
315	MSO	18	7	39	10	10	3	1	4	2	4	5
316	MSO	19	4	23	6	6	2	0	2	1	1	1
317	MSO	20	4	15	6	7	3	2	4	2	1	1
318	MSO	21	9	49	12	11	4	0	6	3	2	4
319	MSO	22	5	32	7	6	2	0	2	1	1	2
320	MSO	23	5	21	7	6	2	0	2	1	1	2
321	MSO	24	2	23	4	3	2	0	2	1	0	1
322	MSO	25	4	35	6	5	4	0	4	2	1	2
323	MSO	26	1	4	3	2	2	0	1	1	0	0
324	MSO	27	2	56	5	4	2	0	2	1	1	1

REG—Region; **HNUM**—House number; **NRR**—Number of roofed rooms (excluding rooms used but not part of the house); **SQMRA**—Square meters roofed area (excluding rooms used but not part of the house); **NG**—Nodes in the graph; **EG**—Edges in the graph; **HL**—Number of hierarchical levels in the graph; **CR**—Number of circuits; **AC**—Number of accessibility ranks from the path matrix; **TS**—Number of transitional spaces; **SR**—Number of specialized storage/stable rooms; **SI**—Specialization Index (excludes transitional spaces). The following case numbers (numbers in the leftmost column) identify regional populations of houses: China—Cases 3–21; India—Cases 29–31, 38–66, 76, 77; Nepal—Cases 32–37, 67–75; Southwest Asia Main Series—Cases 81–224; Southwest Asia "Other"—Cases 78–80, 225–297 (excepting 293 and 294); Mesoamerica—Cases 298–324.

APPENDIX 7

	RG	ID	Canon	SX	Marr	Arr	Str	Pooling
1	IP	1	1	0	2	1	0	0
2	IP	2	5	1	3	2	2	1
3	CH	1	5	1	•	2	2	1
4	CH	2	3	1	3	2	2	1
5	CH	3	2	1	3	2	1	•
6	CH	4	4	1	3	2	2	1
7	CH	5	3	•	3	2	2	1
8	SEA	1	3	0	2	1	2	1
9	SEA	2	5	0	2	2	2	1
10	SA	1	3	1	2	•	0	•
11	SA	2	0	0	2	2	0	0
12	SA	3	2	0	3	1	1	1
13	SWA	1	0	0	1	2	1	1
14	SWA	2	0	0	1	•	0	0
15	SWA	3	0	0	1	1	0	0
16	SWA	4	0	1	2	2	1	1
17	SWA	5	1	1	•	1	2	•
18	SWA	6	0	0	•	•	1	1
19	SWA	7	0	1	•	•	1	1
20	SWA	8	1	1	2	2	2	1
21	SWA	9	1	1	•	•	•	•
22	MSO	1	4	1	1	1	2	1
23	MSO	2	1	0	2	1	1	0
24	MSO	3	1	0	•	0	0	0
25	MSO	4	1	1	3	1	1	0
26	MSO	5	1	0	1	0	0	0

Canon—Canonicality value (defined in the text); **SX**—Gender-specific space use in the house (0 = no; 1 = yes); **Marr**—Close or distant marriage (1 = community endogamy common; 2 = local and distant marriages equally likely; 3 = community exogamy common); **Arr**—Arranged marriages (0 = little parental interference; 1 = children have some but not total freedom to arrange marriages; 2 = strong parental control over marriage arrangements); **Str**—Social reproductive strategy (0 = neolocal; 1 = intermediate; 2 = household continuity strategy); **Pooling**—Pooling of household resources (0 = no; 1 = yes).

APPENDIX 8

	AG	ID	PE	NT	TYPE	C-P	BNG	BHL	BCR	BAC	CNG	CHL	CCR	CAC	HR
1	IP	1	2	1	1	CORE	3	3	1	2	12	5	6	8	0
2	IP	2	2	1	1	CORE	14	4	7	9	19	5	8	9	1
3	CN	1	0	1	1	PER	6	3	0	2	65	6	40	34	0
4	CN	2	1	1	1	CORE	•	•	•	•	•	•	•	•	•
5	CN	3	0	3	2	PER	2	1	0	1	10	6	•	7	0
6	CN	4	0	3	1	CORE	5	3	0	2	17	8	•	11	•
7	CN	5	0	•	2	PER	•	•	•	•	•	•	•	•	•
8	SEA	1	0	3	2	PER	•	•	•	•	29	10	8	15	•
9	SEA	2	0	4	1	CORE	7	3	1	2	7	4	4	5	0
10	SA	1	0	2	1	CORE	7	4	0	4	10	5	3	11	1
11	SA	2	2	•	1	CORE	7	3	•	2	8	4	•	3	•
12	SA	3	0	2	1	PER	6	5	0	3	8	5	0	4	0
13	SWA	1	0	1	1	CORE	8	6	1	5	15	4	4	9	0
14	SWA	2	2	1	1	CORE	4	2	0	2	8	3	0	4	0
15	SWA	3	0	1	2	CORE	5	2	0	2	15	5	1	•	0
16	SWA	4	1	1	2	PER	6	3	0	3	19	6	•	•	0
17	SWA	5	•	1	2	CORE	4	2	0	3	22	8	1	10	•
18	SWA	6	0	2	2	PER	10	3	0	4	21	5	0	8	0
19	SWA	7	0	1	1	PER	•	•	•	•	21	6	2	11	•
20	SWA	8	0	3	2	CORE	•	•	•	•	8	•	•	•	0
21	SWA	9	•	1	1	PER	7	3	0	2	21	6	3	13	0
22	MSO	1	1	3	1	CORE	3	2	1	1	9	3	3	4	•
23	MSO	2	0	2	1	CORE	4	2	0	2	6	4	2	4	0
24	MSO	3	1	2	1	PER	3	2	0	1	15	5	0	5	0
25	MSO	4	•	2	2	PER	3	2	0	1	10	3	2	4	0
26	MSO	5	1	1	1	CORE	6	4	0	4	12	4	0	6	0

PE—Emic concept of shared poverty or equality? (0 = no; 1 = some; 2 = important); **NT**—Number of emically identified house types; **TYPE**—Core or periphery type (1 or 2); **C-P**—Core or periphery status; **BNG**—Basic house, number of nodes in graph; **BHL**—Basic house, number of hierarchical levels in graph; **BCR**—Basic house, number of circuits; **BAC**—Basic house, number of accessibility ranks from the path matrix; **CNG**—Costly house, number of nodes in graph; **CHL**—Costly house, number of hierarchical levels in graph; **CCR**—Costly house, number of circuits; **CAC**—Costly house, number of accessibility ranks from the path matrix; **HR**—Restrictions concerning house form or decoration? (0 = none; 1 = present).

APPENDIX 9

	REG	CID	HNUM	FB	FF	FE	RE	FS	MF	BEC
1	IP	1	1	•	1	•	•	1	•	•
2	IP	1	2	•	1	1	•	1	•	•
3	CH	1	1	•	3	2	0	2	0	5
4	CH	1	2	•	3	•	•	2	2	•
5	CH	1	3	•	•	•	•	2	2	•
6	CH	1	4	7	3	3	2	2	2	15
7	CH		5	•	0	0	0	1	0	1
8	CH		6	•	•	0	0	0	0	0
9	CH		7	•	0	0	1	0	0	1
10	CH		8	•	•	2	0	2	0	4
11	CH		9	•	•	•	•	1	1	•
12	CH		10	•	•	2	2	1	0	5
13	CH		11	•	•	2	2	2	0	6
14	CH		12	•	0	0	0	0	0	0
15	CH		13	•	0	0	0	0	0	0
16	CH		14	1	3	2	0	2	0	6
17	CH		15	•	0	2	3	2	0	7
18	CH		16	•	0	5	0	2	0	7
19	CH		17	•	0	4	0	2	0	6
20	CH		18	3	1	9	•	1	0	13
21	CH	5	19	•	3	7	2	2	0	12
22	SEA	1	1	0	3	3	0	0	0	4
23	SEA	1	2	•	3	•	•	•	0	•
24	SEA	2	3	•	1	0	0	0	•	0
25	SEA	2	4	•	1	0	0	0	•	0
26	SEA	2	5	•	1	2	0	1	•	3
27	SEA	2	6	•	3	3	1	1	•	6
28	SEA	2	7	2	3	5	2	1	•	11
29	SA	1	1	•	3	•	•	0	0	•
30	SA	1	2	•	3	•	•	0	0	•
31	SA	1	3	•	3	0	0	1	0	2
32	SA		4	•	1	0	0	0	0	0
33	SA		5	•	1	1	0	0	0	1
34	SA		6	•	1	1	•	1	1	2
35	SA		7	•	1	3	0	1	1	4
36	SA		8	•	1	5	0	1	0	6
37	SA		9	•	0	4	0	1	2	5
38	SA		10	•	1	0	0	0	0	0
39	SA		11	0	1	0	0	2	0	2
40	SA		12	•	•	4	1	2	0	7
41	SA		13	•	•	0	0	2	0	2
42	SA		14	•	•	3	1	1	0	5

	REG	CID	HNUM	FB	FF	FE	RE	FS	MF	DEC
43	SA		15	•	•	1	0	0	•	1
44	SA		16	•	1	0	0	0	0	0
45	SA		17	•	0	4	0	0	0	4
46	SA		18	•	•	0	0	0	0	0
47	SA		19	•	•	2	0	2	0	4
48	SA		20	•	•	1	0	1	0	2
49	SA		21	•	•	1	0	1	0	2
50	SA		22	•	•	0	0	2	0	2
51	SA		23	•	•	0	0	0	0	0
52	SA		24	•	•	0	0	0	0	0
53	SA		25	•	•	0	0	2	0	2
54	SA		26	•	•	0	0	1	0	1
55	SA		27	•	•	0	0	0	0	0
56	SA		28	•	•	0	0	0	0	0
57	SA		29	•	•	0	0	0	0	0
58	SA		30	•	•	0	0	0	0	0
59	SA		31	•	•	0	0	0	0	0
60	SA		32	•	•	0	0	0	0	0
61	SA		33	•	•	0	0	1	0	1
62	SA		34	•	0	0	0	0	•	0
63	SA		35	•	•	0	0	0	0	0
64	SA		36	•	1	0	0	1	1	1
65	SA		37	•	0	0	0	0	0	0
66	SA		38	•	0	1	0	0	0	1
67	SA		39	0	1	4	0	1	0	5
68	SA		40	2	1	6	0	1	1	9
69	SA		41	•	0	6	1	1	0	8
70	SA		42	•	0	0	0	0	0	0
71	SA		43	•	3	5	0	1	0	7
72	SA		44	•	0	5	1	1	0	7
73	SA		45	•	0	7	0	1	0	0
74	SA	3	46	•	3	0	0	0	0	1
75	SA	3	47	•	3	5	0	1	0	7
76	SA		48	•	•	2	0	2	0	4
77	SA		49	•	•	0	0	0	0	0
78	SWA	1	1	•	1	1	0	0	0	1
79	SWA	1	2	•	0	2	0	1	0	3
80	SWA		3	•	0	•	•	1	0	•
81	SWA	2	4	•	1	•	•	1	1	•
82	SWA	2	5	•	0	•	•	•	2	•
83	SWA	2	6	•	1	•	•	0	1	•
84	SWA	2	7	•	1	•	•	•	2	•

	REG	CID	INUM	FD	FF	FE	RE	FS	MF	DEC
85	SWA	2	8	•	1	•	•	•	1	•
86	SWA	2	9	•	1	•	•	•	1	•
87	SWA	2	10	•	1	•	•	•	1	•
88	SWA	2	11	•	1	•	•	•	1	•
89	SWA	2	12	•	1	•	•	•	1	•
90	SWA	2	13	•	1	•	•	•	0	•
91	SWA	2	14	•	1	•	•	•	1	•
92	SWA	2	15	•	1	•	•	•	1	•
93	SWA	2	16	•	1	•	•	•	0	•
94	SWA	2	17	•	1	•	•	•	0	•
95	SWA	2	18	•	1	•	•	•	0	•
96	SWA	2	19	•	1	•	•	•	1	•
97	SWA	2	20	•	1	•	•	•	1	•
98	SWA	2	21	•	1	•	•	•	1	•
99	SWA	2	22	•	1	•	•	•	0	•
100	SWA	2	23	•	1	•	•	•	2	•
101	SWA	2	24	•	1	•	•	•	0	•
102	SWA	2	25	•	1	•	•	•	2	•
103	SWA	2	26	•	1	•	•	•	1	•
104	SWA	2	27	•	1	•	•	•	1	•
105	SWA	2	28	•	1	•	•	•	1	•
106	SWA	2	29	•	1	•	•	•	1	•
107	SWA	2	30	•	1	•	•	•	1	•
108	SWA	2	31	•	1	•	•	•	1	•
109	SWA	2	32	•	0	•	•	•	0	•
110	SWA	2	33	•	1	0	0	•	0	0
111	SWA	3	34	•	1	•	•	•	2	•
112	SWA	3	35	•	1	•	•	•	1	•
113	SWA	3	36	•	1	•	•	1	1	•
114	SWA	3	37	•	1	•	•	•	1	•
115	SWA	3	38	•	0	•	•	•	0	•
116	SWA	3	39	•	1	•	•	•	1	•
117	SWA	3	40	•	1	•	•	•	0	•
118	SWA	3	41	•	0	•	•	•	1	•
119	SWA	3	42	•	1	•	•	•	2	•
120	SWA	3	43	•	0	•	•	•	1	•
121	SWA	3	44	•	0	•	•	•	0	•
122	SWA	3	45	•	1	•	•	•	1	•
123	SWA	3	46	•	1	•	•	•	1	•
124	SWA	3	47	•	0	•	•	•	0	•
125	SWA	3	48	•	1	•	•	•	2	•
126	SWA	3	49	•	1	•	•	•	1	•

	REG	CID	HNUM	FB	FF	FE	RE	FS	MF	BEC
127	SWA	3	50	•	1	•	•	•	1	•
128	SWA	3	51	•	1	3	0	1	1	4
129	SWA	3	52	•	0	•	•	•	0	•
130	SWA	3	53	•	1	•	•	•	2	•
131	SWA	3	54	•	0	•	•	•	0	•
132	SWA	3	55	•	0	•	•	•	2	•
133	SWA	3	56	•	1	2	0	1	0	3
134	SWA	3	57	•	0	•	•	•	1	•
135	SWA	3	58	•	0	•	•	•	0	•
136	SWA	3	59	•	1	•	•	•	0	•
137	SWA	3	60	•	1	•	•	•	2	•
138	SWA	3	61	•	0	•	•	•	1	•
139	SWA	3	62	•	0	•	•	•	1	•
140	SWA	3	63	•	1	2	0	1	1	3
141	SWA	3	64	•	0	•	•	•	0	•
142	SWA	3	65	•	1	•	•	•	1	•
143	SWA	3	66	•	1	•	•	•	1	•
144	SWA	3	67	•	1	•	•	•	•	•
145	SWA	3	68	•	1	•	•	•	1	•
146	SWA	4	69	•	1	1	0	0	0	1
147	SWA	4	70	2	3	•	•	0	0	3
148	SWA	4	71	1	1	•	•	•	•	•
149	SWA	4	72	•	1	•	•	•	1	•
150	SWA	4	73	•	1	•	•	•	0	•
151	SWA	4	74	•	3	•	•	•	0	1
152	SWA	4	75	•	3	•	•	1	0	2
153	SWA	4	76	•	3	•	•	•	0	1
154	SWA	4	77	•	1	•	•	•	1	•
155	SWA	4	78	•	1	•	•	•	1	•
156	SWA	4	79	1	3	•	•	•	0	2
157	SWA	4	80	1	3	•	•	•	0	2
158	SWA	4	81	6	3	•	•	•	1	7
159	SWA	4	82	•	1	•	•	•	1	•
160	SWA	4	83	1	3	•	•	1	2	3
161	SWA	4	84	•	1	•	•	•	2	•
162	SWA	4	85	•	3	•	•	•	1	1
163	SWA	4	86	1	3	•	•	•	2	2
164	SWA	4	87	•	3	•	•	•	2	1
165	SWA	4	88	•	1	•	•	•	•	•
166	SWA	4	89	•	1	•	•	•	1	•
167	SWA	4	90	•	1	•	•	•	1	•
168	SWA	4	91	1	3	•	•	•	2	2

	REG	CIB	NNUM	FB	FF	FE	RE	FS	MF	REC
169	SWA	4	92	•	1	•	•	•	1	•
170	SWA	4	93	•	1	•	•	•	1	•
171	SWA	4	94	•	3	•	•	•	2	1
172	SWA	4	95	1	3	•	•	•	1	2
173	SWA	4	96	•	1	•	•	•	1	•
174	SWA	4	97	•	3	•	•	•	2	1
175	SWA	4	98	•	1	•	•	•	2	•
176	SWA	4	99	1	3	•	•	•	2	2
177	SWA	4	100	1	3	•	•	•	0	2
178	SWA	4	101	•	3	•	•	•	1	1
179	SWA	4	102	1	3	•	•	•	1	2
180	SWA	4	103	•	1	•	•	•	2	•
181	SWA	4	104	•	1	•	•	•	0	•
182	SWA	4	105	•	1	•	•	•	•	•
183	SWA	4	106	•	3	•	•	•	1	1
184	SWA	4	107	•	1	•	•	•	1	•
185	SWA	4	108	•	1	•	•	•	•	•
186	SWA	4	109	1	1	•	•	•	1	1
187	SWA	4	110	•	1	•	•	•	1	•
188	SWA	4	111	•	3	•	•	•	2	1
189	SWA	4	112	•	3	•	•	•	2	1
190	SWA	4	113	1	3	•	•	•	2	2
191	SWA	4	114	•	1	•	•	•	1	•
192	SWA	4	115	•	1	•	•	•	1	•
193	SWA	4	116	•	1	•	•	•	2	•
194	SWA	4	117	•	1	•	•	•	2	•
195	SWA	4	118	•	3	•	•	0	2	1
196	SWA	4	119	•	1	•	•	•	2	•
197	SWA	4	120	1	3	•	•	•	1	2
198	SWA	4	121	1	3	•	•	•	1	2
199	SWA	4	122	1	3	•	•	•	1	2
200	SWA	4	123	•	1	•	•	•	1	•
201	SWA	4	124	•	1	•	•	•	1	•
202	SWA	4	125	•	3	•	•	•	1	1
203	SWA	4	126	•	1	•	•	•	1	•
204	SWA	4	127	•	1	•	•	•	1	•
205	SWA	4	128	•	1	•	•	•	1	•
206	SWA	4	129	•	3	•	•	•	1	1
207	SWA	4	130	•	1	•	•	•	1	•
208	SWA	4	131	•	3	•	•	•	2	1
209	SWA	4	132	1	3	•	•	2	1	3
210	SWA	4	133	•	1	•	•	•	2	•

	REG	CID	RNUM	FB	FF	FE	RE	FS	MF	REC
211	SWA	4	134	•	1	•	•	•	2	•
212	SWA	4	135	•	3	7	0	1	2	9
213	SWA	5	136	1	3	1	0	1	1	4
214	SWA	5	137	•	0	•	•	•	0	•
215	SWA	6	138	•	1	1	•	1	2	2
216	SWA	6	139	•	1	1	•	1	2	2
217	SWA	6	140	•	1	2	•	1	2	3
218	SWA	6	141	•	3	•	•	0	2	1
219	SWA	6	142	•	1	1	•	0	0	1
220	SWA	6	143	•	3	1	•	0	2	2
221	SWA	6	144	•	1	2	•	2	2	4
222	SWA	6	145	•	1	0	•	0	1	0
223	SWA	6	146	•	1	2	0	1	1	3
224	SWA	6	147	•	1	1	•	0	1	1
225	SWA	7	148	•	0	4	0	2	0	6
226	SWA		149	•	0	3	0	1	0	4
227	SWA		150	•	0	5	0	2	0	7
228	SWA		151	•	0	3	0	0	0	3
229	SWA		152	•	3	4	0	2	0	7
230	SWA		153	2	2	5	0	1	0	9
231	SWA		154	2	1	5	0	0	2	7
232	SWA		155	1	3	•	•	0	1	2
233	SWA		156	•	0	•	•	•	0	•
234	SWA		157	•	0	•	•	•	0	•
235	SWA		158	7	1	6	0	•	1	13
236	SWA		159	•	0	5	•	•	2	5
237	SWA		160	•	1	•	0	1	0	•
238	SWA		161	9	3	•	0	1	1	11
239	SWA		162	•	0	0	•	0	0	0
240	SWA		163	•	1	4	•	•	0	4
241	SWA		164	•	1	0	•	0	2	0
242	SWA		165	•	1	5	0	1	0	6
243	SWA		166	•	0	9	0	1	0	10
244	SWA		167	•	1	1	0	0	0	1
245	SWA		168	•	0	0	0	0	0	0
246	SWA		169	•	0	0	0	0	0	0
247	SWA		170	•	0	0	0	0	0	0
248	SWA		171	•	0	0	0	0	0	0
249	SWA		172	•	0	0	0	0	0	0
250	SWA		173	0	1	0	0	0	0	0
251	SWA		174	•	0	1	0	1	0	2
252	SWA		175	•	1	•	•	0	1	•

	REG	CID	HNUM	FD	FF	FE	RE	FS	MF	DEC
253	SWA		176	•	1	7	0	2	0	9
254	SWA		177	•	1	4	0	1	2	5
255	SWA		178	0	1	•	•	1	0	•
256	SWA		179	0	1	4	0	0	0	4
257	SWA		180	•	0	3	0	1	0	4
258	SWA		181	•	0	3	•	0	0	3
259	SWA		182	•	0	3	•	1	0	4
260	SWA		183	•	0	3	•	0	0	3
261	SWA		184	•	0	3	•	0	0	3
262	SWA		185	•	0	3	•	0	0	3
263	SWA		186	•	0	3	•	0	0	3
264	SWA		187	•	0	3	•	1	0	4
265	SWA		188	•	0	3	•	1	0	4
266	SWA		189	•	0	3	•	1	0	4
267	SWA		190	•	0	3	•	1	0	4
268	SWA		191	•	0	3	•	0	0	3
269	SWA		192	•	0	3	•	0	0	3
270	SWA		193	•	1	•	•	•	•	•
271	SWA		194	•	0	3	0	2	0	5
272	SWA		195	•	0	•	•	0	0	•
273	SWA		196	•	3	•	•	0	0	1
274	SWA		197	•	1	•	•	•	•	•
275	SWA		198	•	0	0	•	0	0	0
276	SWA		199	•	3	•	0	0	•	1
277	SWA		200	•	0	3	0	2	0	5
278	SWA		201	•	0	6	0	2	0	8
279	SWA		202	•	0	6	0	2	0	8
280	SWA		203	•	0	6	0	2	0	8
281	SWA		204	•	0	15	0	2	0	17
282	SWA		205	•	0	•	•	0	0	•
283	SWA		206	•	0	•	•	0	0	•
284	SWA		207	•	0	•	•	0	0	•
285	SWA		208	•	0	•	•	0	0	•
286	SWA		209	•	0	2	•	0	0	2
287	SWA		210	•	0	2	•	1	0	3
288	SWA		211	•	0	2	•	1	0	3
289	SWA		212	•	0	2	•	1	0	3
290	SWA		213	•	1	2	•	0	1	2
291	SWA		214	•	0	•	•	0	0	•
292	SWA		215	•	0	5	•	1	0	6
293	SWA		216	•	1	•	•	•	0	•
294	SWA		217	•	0	•	•	•	2	•

	REG	CID	ANUM	FD	FF	FE	RE	FS	MF	DEC
295	SWA	9	218	•	1	7	0	2	1	9
296	SWA	9	219	•	1	1	0	0	1	1
297	SWA	9	220	•	1	1	0	0	1	1
298	MSO	1	1	0	1	•	0	1	1	1
299	MSO	1	2	0	1	•	0	1	1	1
300	MSO	2	3	•	1	0	0	2	1	2
301	MSO	2	4	•	1	•	0	2	1	2
302	MSO		5	•	0	1	0	2	0	3
303	MSO		6	•	0	1	0	2	0	3
304	MSO		7	0	1	0	0	0	0	0
305	MSO		8	0	1	0	0	2	0	2
306	MSO		9	•	0	0	0	2	0	2
307	MSO		10	•	0	0	0	0	0	0
308	MSO	4	11	•	0	0	0	0	1	0
309	MSO	5	12	•	0	•	•	1	0	•
310	MSO		13	•	1	•	•	1	2	•
311	MSO		14	•	1	•	•	1	2	•
312	MSO		15	•	1	•	•	0	2	•
313	MSO		16	•	0	•	•	1	1	•
314	MSO		17	•	0	•	•	1	1	•
315	MSO		18	•	1	•	•	1	1	•
316	MSO		19	•	0	•	•	0	1	•
317	MSO		20	•	1	•	•	1	1	•
318	MSO		21	•	3	•	•	1	2	4
319	MSO		22	•	1	•	•	0	1	•
320	MSO		23	•	1	•	•	0	1	•
321	MSO		24	•	0	0	0	2	0	2
322	MSO		25	•	0	0	0	1	0	1
323	MSO		26	•	0	0	0	2	0	2
324	MSO		27	•	1	0	0	2	0	2

FD—Number of forecourt decorative elements (including wall decoration, gate decoration); **FF**—Forecourt (0 = none; 1 = present; 2 = present with decorative elements; 3 = other preentry decorative elements); **FE**—Number of facade communicative elements; **RE**—Number of roof communicative elements; **FS**—Symmetry of facade and roof elements (0 = none; 1 = some; 2 = formal); **MF**—Masking of facade? (0 = no; 1 = possible; 2 = yes); **DEC**—Sum of elements of external decoration (see text).

APPENDIX 10

	AG	ID	CP	CA	CS	RI	CE	CR	Comm	Ext	DEC	STR	INT
1	IP	1	0	3	1	1	1	2	1	0	2	0	4
2	IP	2	0	3	0	2	1	2	1	0	6	2	5
3	CH	1	2	•	12	1	0	2	1	1	15	2	3
4	CH	2	0	3	6	0	1	1	1	0	•	2	2
5	CH	3	2	2	5	0	0	1	1	1	0	1	1
6	CH	4	0	3	1	0	0	0	1	0	9	2	0
7	CH	5	1	3	5	•	•	•	1	1	•	2	•
8	SEA	1	0	3	3	1	1	2	1	0	4	2	4
9	SEA	2	0	3	3	1	0	1	1	0	11	2	2
10	SA	1	0	3	2	0	1	0	1	0	•	0	1
11	SA	2	0	2	1	2	1	2	0	0	2	0	5
12	SA	3	0	2	0	1	1	2	0	1	7	1	4
13	SWA	1	1	2	3	1	1	2	0	0	3	1	4
14	SWA	2	0	2	0	1	1	1	0	0	•	0	3
15	SWA	3	0	2	1	1	1	1	0	0	4	0	3
16	SWA	4	0	2	1	0	1	•	0	1	5	1	•
17	SWA	5	•	2	•	1	1	•	0	0	3	2	•
18	SWA	6	0	2	0	0	1	1	0	1	5	1	2
19	SWA	7	0	2	0	1	1	•	0	1	6	1	•
20	SWA	8	0	2	1	1	1	1	0	0	5	2	3
21	SWA	9	•	3	3	0	•	•	1	1	9	•	•
22	MSO	1	1	2	4	2	1	2	0	0	1	2	5
23	MSO	2	0	3	1	2	1	2	1	0	2	1	5
24	MSO	3	1	3	3	2	1	2	1	1	7	0	5
25	MSO	4	0	3	1	2	1	2	1	0	0	1	5
26	MSO	5	0	2	2	1	1	2	0	0	3	0	4

CP—Central-place functions (0 = none or minimal; 1 = market lower than standard market in rank; 2 = standard market; 3 = small town); **CA**—Commercialization of agriculture (1 = subsistence farming; 2 = subsistence farming plus some marketed commodities; 3 = strong orientation to agricultural commodity production); **CS**—Number of kinds of commercial specialists in the community; **RI**—Community redistributional institutions (0 = none or minor; 1 = present but not pervasive; 2 = important); **CE**—Communal cemetery? (0 = none; 1 = yes); **CR**—Communal ritual (0 = none or rare; 1 = few, 1–3 in the annual cycle; 2 = important, 4 or more during the annual cycle and well attended); **Comm**—Degree of overall commercialization (0 = little emphasis; 1 = more emphasis); **Ext**—External orientation (0 = localized market transactions primarily; 1 = significant external market orientation); **DEC**—Sum of elements of external decoration; **STR**—Social reproductive strategy (see Appendix 7); **INT**—Overall measure of community integration (combines RI, CE, and CR).

References

Abrams, Elliot M. 1984. Systems of Labor Organization in Late Classic Copan, Honduras: The Energetics of Construction. PhD dissertation, Pennsylvania State University.

Alexander, Christopher, Sara Ishikawa, and Murray Silverstein. 1977. *A Pattern Language.* Oxford: Oxford University Press.

Allen, James de Vere. 1975. *The Swahili House: Cultural and Ritual Concepts Underlying Its Plan and Structure.* Art and Archaeology Research Papers.

Baker, Laurie. 1986. *Houses: How to Reduce Building Costs.* Triprayar, Valapad, India: Centre of Science and Technology for Rural Development, Sree Rama Polytechnic.

Bateson, Gregory. 1972. *Steps to an Ecology of Mind.* New York: Ballantine.

Bayless, Mark, and Susan Bayless. 1982. Current quality of life indicators: Some theoretical and methodological concerns. *American Journal of Economics and Sociology* 41: 421–437.

Bazin, Marcel, Christian Bromberger, Asghar Askari, and Asghar Karimi. 1982. *Gilân et Âzarbâyjân Oriental: Cartes et Documents Ethnographiques.* Bibliothèque Iranienne 24. Paris: Institute Français D'Iranologie de Téhéran.

Beals, Ralph L. 1946. *Chéran: A Sierra Tarascan Village.* Institute of Social Anthropology, Publication 2. Washington, DC: Smithsonian Institution.

Beals, Ralph L., Pedro Carrasco, and Thomas McCorkle. 1944. *Houses and House Use of the Sierra Tarascans.* Institute of Social Anthropology, Publication 1. Washington, DC: Smithsonian Institution.

Beardsley, Richard K., John W. Hall, and Robert E. Ward. 1959. *Village Japan.* Chicago: University of Chicago Press.

Becker, Gary S. 1976. A theory of the allocation of time. In *The Economic Approach to Human Behavior,* pp. 89–114. Chicago: University of Chicago Press.

Becker, Gary S. 1981. *A Treatise on the Family.* Cambridge: Harvard University Press.

Becker, Gary S., and Robert T. Michael. 1976. On the new theory of consumer behavior. In *The Economic Approach to Human Behavior,* pp. 131–152. Chicago: University of Chicago Press.

Belcher, John. 1972. A cross-cultural household level-of-living scale. *Rural Sociology* 37: 208–220.

Belk, Russell W. 1988. Possessions and the extended self. *Journal of Consumer Research* 15: 139–168.

Bender, Donald. 1967. A refinement of the concept of household. *American Anthropologist* 69: 493–504.

Blair, Katherine D. 1983. *4 Villages: Architecture in Nepal.* Los Angeles: Craft and Folk Art Museum.

Blanton, Richard E. 1978. *Monte Albán: Settlement Patterns at the Ancient Zapotec Capital.* New York: Academic Press.

Blanton, Richard E. 1985. A comparison of early market systems. In *Markets and Marketing.* Edited by S. Plattner, pp. 399–416. Lanham, Maryland: University Press of America.

Blanton, Richard E. 1989. Continuity and change in public architecture: Periods I through V of the Valley of Oaxaca, Mexico. In *Monte Albán's Hinterland, Part II: Prehispanic Settlement Patterns in Tlacolula, Etla, and Ocotlan, the Valley of Oaxaca, Mexico.* By S. A. Kowalewski, G. M. Feinman, L. Finstein, R. E. Blanton, and L. M. Nicholas, pp. 409–447. Ann Arbor: University of Michigan, Museum of Anthropology, Memoir 23.

Blanton, Richard E., Stephen Kowalewski, Gary Feinman, and Jill Appel. 1982. *Monte Albán's Hinterland, Part I: The Prehispanic Settlement Patterns of the Central and Southern Parts of the Valley of Oaxaca, Mexico.* Ann Arbor: University of Michigan, Museum of Anthropology, Memoir 15.

Blier, Suzanne P. 1987. *The Anatomy of Architecture: Ontology and Metaphor in Batammaliba Architectural Expression.* Cambridge: Cambridge University Press.

Bloch, Maurice. 1977. The past and the present in the present. *Man* 12: 279–292.

Boccianti, Carlo. 1979. *Vernacular Architecture in Southern Turkey.* Art and Archaeology Research Papers 15.

Bourdieu, Pierre. 1973. The Berber house. In *Rules and Meanings.* Edited by M. Douglas, pp. 98–110. Harmondsworth, England: Penguin.

Bourdieu, Pierre. 1976. Marriage strategies as strategies of social reproduction. In *Family and Society.* Edited by R. Forster and O. Ranum, pp. 117–144. Baltimore: Johns Hopkins University Press.

Bourdieu, Pierre. 1977. *Outline of a Theory of Practice.* Cambridge: Cambridge University Press.

Bourdieu, Pierre. 1984. *Distinction: A Social Critique of the Judgement of Taste.* Cambridge: Harvard University Press.

Boyd, Andrew. 1962. *Chinese Architecture and Town Planning: 1500 B.C.–A.D. 1911.* Chicago: University of Chicago Press.

Braudel, Fernand. 1979. *Civilization and Capitalism, 15th–18th Century, Volume I: The Structures of Everyday Life.* New York: Harper & Row.

Bromberger, Christian. 1974. Habitations du Gilân. *Objets et Mondes* XIV: 3–56.

Bromberger, Christian. 1986. *Habitat, Architecture et Société Rurale dans la Plaine du Gilân (Iran Septentrional).* Establissements Humains et Environment Socio-Culturel 36. UNESCO.

Buck, John L. 1937. *Land Utilization in China.* Chicago: University of Chicago Press.

Burling, Robbins. 1963. *Rengsanggri.* Philadelphia: University of Pennsylvania Press.

Campo, Juan Eduardo. 1991. *The Other Side of Paradise: Explorations into the Religious Meanings of Domestic Space in Islam.* Columbia: University of South Carolina Press.

Cancian, Frank. 1989. Economic behavior in peasant communities. In *Economic Anthropology.* Edited by S. Plattner, pp. 127–170. Stanford: Stanford University Press.

Cannon, Aubrey. 1989. The historical dimension in mortuary expressions of status and sentiment. *Current Anthropology* 30: 437–458.

Chambers, Erve J., and Philip D. Young. 1979. Mesoamerican community studies: The past decade. *Annual Review of Anthropology* 8: 45–69.

Chandru, Uma Vijaya. 1989. Development and Housing Strategies in Two Rural Villages in South India. Master's thesis, Purdue University.

Chapin, Stuart. 1933. *The Measurement of Social Status.* Minneapolis: University of Minnesota Press.

Chapin, Stuart. 1935. *Contemporary American Institutions.* New York: Harper & Row.

Chapman, Dennis. 1955. *The Home and Social Status.* London: Routledge & Kegan Paul.

Charlton, Thomas. 1970. Contemporary settlement patterns: The Cerro Gordo-North Slope and Upper Valley areas. In *The Natural Environment, Contemporary Occupation, and 16th Century Population of the Valley.* Edited by W. T. Sanders, A. Kovar, T. Charlton, and R. Diehl, pp. 81–252. University Park: The Pennsylvania State University, Department of Anthropology, Occasional Papers in Anthropology 3.

Cheal, David. 1989. Strategies of resource management in household economies: Moral economy or political economy? In *The Household Economy: Reconsidering the Domestic Mode of Production.* Edited by Richard R. Wilk, pp. 11–22. Boulder: Westview Press.

Christensen, Nerthus von. 1967. Haustypen und Gehöftbildung in Westpersien. *Anthropos* 62: 89–138.

Clément-Charpentier, Sophie, and Pierre Clément. 1988. *L'Habitation Lao dans les Régions de Ventiane et de Louang Prabang.* Paris: Peeters/SELAF.

Cohen, Myron L. 1976. *House United, House Divided: The Chinese Family in Taiwan.* New York: Columbia University Press.

Crary, Donald. 1949. Irrigation and land use in Zeiniya Bahari, Upper Egypt. *The Geographical Review* 39: 568–583.

Critchlow, Keith. 1977. Niiike: The siting of a Japanese rural house. In *Shelter, Sign, and Symbol.* Edited by P. Oliver, pp. 219–226. New York: Overlook.

Cunningham, Clark E. 1973. Order in the Atoni house. In *Right and Left: Essays in Dual Symbolic Classification.* Edited by R. Needham, pp. 204–238. Chicago: University of Chicago Press.

Dargyay, Eva K. 1989. The house as sacred space in the folk-religion of Zanskar (West Himalayas). In *Households and Communities.* Edited by S. MacEachern, D. J. W. Archer, and R. D. Garvin, pp. 35–41. Calgary: The University of Calgary Archaeological Association.

Deal, Michael. 1987. Ritual space and architecture in the Highland Maya household. In *Mirror and Metaphor: Material and Social Constructions of Reality.* Edited by D. W. J. Ingersoll and G. Bronitsky, pp. 172–198. Lanham, Maryland: University Press of America.

deYoung, John E. 1955. *Village Life in Modern Thailand.* Berkeley: University of California Press.

Diebold, A. Richard Jr. 1969. The Huave. In *Handbook of Middle American Indians, Volume Seven, Part One, Ethnology.* Edited by E. Z. Vogt, pp. 478–488. Austin: University of Texas Press.

Donham, Donald L. 1981. Beyond the domestic mode of production. *Man* 16: 515–541.

Donley, Linda. 1982. House power: Swahili space and symbolic markers. In *Symbolic and Structural Archaeology.* Edited by I. Hodder, pp. 63–73. Cambridge: Cambridge University Press.

Douglas, Mary. 1970. *Natural Symbols.* London: Barrie & Rockliff.

Douglas, Mary. 1972. Symbolic orders in the use of domestic space. In *Man, Settlement, and Urbanism.* Edited by P. Ucko, R. Tringham, and G. Dimbleby, pp. 513–522. London: Duckworth.

Douglas, Mary, and Baron Isherwood. 1979. *The World of Goods: Towards an Anthropology of Consumption.* New York: W. W. Norton.

Dube, S. C. 1955. *Indian Village.* Ithaca: Cornell University Press.

Dumont, Louis. 1980. *Homo Hierarchicus: The Caste System and Its Implications.* Chicago: University of Chicago Press.

Duncan, James S. 1982. From container of women to status symbol: The impact of social

structure on the meaning of the house. In *Housing and Identity: Cross-Cultural Perspectives.* Edited by J. S. Duncan, pp. 36–59. New York: Holmes and Meier.

Duncan, James S., ed. 1982. *Housing and Identity: Cross-Cultural Perspectives.* New York: Holmes and Meier.

Duncan, James S. 1985. The house as symbol of social structure: Notes on the language of objects among collectivistic groups. In *Home Environments.* Edited by I. Altman and C. M. Werner, pp. 133–151. New York: Plenum.

Duncan, James S., and Nancy Duncan. 1976a. Social worlds, status passage, and environmental perspectives. In *Environmental Knowing: Theories, Research, and Methods.* Edited by G. T. Moore and R. G. Golledge, pp. 206–213. Stroudsberg, Pennsylvania: Dowden, Hutchinson, and Ross.

Duncan, James S., and Nancy Duncan. 1976b. Housing as a presentation of self and the structure of social networks. In *Environmental Knowing: Theories, Research, and Methods.* Edited by G. T. Moore and R. G. Golledge, pp. 247–257. Stroudsberg, Pennsylvania: Dowden, Hutchinson, and Ross.

Dunzhen, Liu. 1980. *La Maison Chinoise.* Translated by Métailie, Georges and Marie-Hélèn, Sophie Clément-Charpentier, and Pierre Clément. Paris: Berger-Levrault.

Eglar, Zekiye. 1960. *A Punjabi Village in Pakistan.* New York: Columbia University Press.

El Guindi, Fadwa. 1966. Ritual and the river in Dahmit. In *Contemporary Egyptian Nubia.* Edited by R. A. Fernea, pp. 239–256. New Haven: Human Relations Area Files.

El Guindi, Fadwa, and Henry Selby. 1976. Dialectics in Zapotec thinking. In *Meaning in Anthropology.* Edited by K. Basso and H. Selby, pp. 181–196. Albuquerque: University of New Mexico Press.

El Safty, Madiha. 1981. Use and organization of domestic space in the Arab world. *International Journal of Sociology of the Family* 11: 2: 177–199.

El-Khoury, Fouad. 1975. *Domestic Architecture in the Lebanon.* Art and Archaeology Research Papers.

Engel, Heinrich. 1964. *The Japanese House: A Tradition for Contemporary Architecture.* Rutland, Vermont: Charles E. Tuttle.

Evans, Susan T. 1989. House and household in the Aztec world: The village of Cihuatecpan. In *Households and Communities.* Edited by S. MacEachern, D. J. W. Archer, and R. D. Garvin, pp. 430–440. Calgary: The University of Calgary Archaeological Association.

Fathy, Hassan. 1966. Notes on Nubian architecture. In *Contemporary Egyptian Nubia.* Edited by R. A. Fernea, pp. 72–76. New Haven: Human Relations Area Files.

Fei, Hsiao-Tung. 1939. *Peasant Life in China: A Field Study of Country Life in the Yangtze Valley.* London: Routledge & Kegan Paul.

Fei, Hsiao-Tung, and Chih-I Chang. 1945. *Earthbound China: A Study of Rural Economy in Yunnan.* Chicago: University of Chicago Press.

Fernea, Robert A. 1973. *Nubians in Egypt: Peaceful People.* Austin: University of Texas Press.

Fisher, James F. 1986. *Trans-Himalayan Traders: Economy, Society, and Culture.* Berkeley: University of California Press.

Flannery, Kent V. 1976. The early Mesoamerican house. In *The Early Mesoamerican Village.* Edited by K. V. Flannery, pp. 16–24. New York: Academic Press.

Flannery, Kent V., and Joyce Marcus, eds. 1983. *The Cloud People: Divergent Evolution of the Zapotec and Mixtec Civilizations.* New York: Academic Press.

Folbre, Nancy. 1988. The black four of hearts: Toward a new paradigm of household economics. In *A Home Divided: Women and Income in the Third World.* Edited by Daisy Dwyer and Judith Bruce, pp. 248–289. Stanford: Stanford University Press.

Foster, George M. 1948. *Empire's Children: The People of Tzintzuntzan.* Institute of Social Anthropology Publication 6. Washington, DC: Smithsonian Institution.

Foster, George M. 1965. Peasant society and the image of limited good. *American Anthropologist* 67: 293–314.

Foster, Sally M. 1989. Analysis of spatial patterns in buildings (access analysis) as an insight into social structure: Examples from the Scottish Atlantic Iron Age. *Antiquity* 63: 40–50.

Freedman, Maurice. 1958. *Lineage Organization in Southeastern China.* London: Athlone.

Freedman, Maurice. 1966. *Chinese Lineage and Society: Fukien and Kwangtung.* London: Athlone.

Freedman, Maurice. 1969. Geomancy. *Proceedings, Royal Anthropological Institute of Great Britain and Ireland, 1968:* 5–15.

Friedman, Yona. 1975. *Toward a Scientific Architecture.* Cambridge: M.I.T. Press.

Fuchs, Aharon Ron, and Michael Meyer-Brodnitz. 1989. The emergence of the central hall house-type in the context of nineteenth century Palestine. In *Dwellings, Settlements, and Tradition: Cross-Cultural Perspectives.* Edited by J.-P. Bourdier and N. Alsayyad, pp. 403–424. Lanham, Maryland: University Press of America.

Fukutake, Tadashi, Tsotomu Ōuchi, and Chie Nakane. 1964. *The Socio-Economic Structure of the Indian Village: Surveys of Villages in Gujarat and West Bengal.* Translated by John R. McEwan. Tokyo: Institute of Asian Economic Affairs.

Gaborieau, Marc. 1981. La maison Indo-Népalaise au Nepal Central. In *L'Homme et la Maison en Himalaya: Ecologie du Népal.* Edited by G. Toffin, L. Barré, and C. Jest, pp. 35–57. Paris: Centre Régional de Publications de Centre National de la Recherche Scientifique.

Gallin, Bernard. 1966. *Hsin Hsing, Taiwan: A Chinese Village in Change.* Berkeley: University of California Press.

Gamble, Sidney D. 1963. *North China Villages: Social, Political, and Economic Activities before 1933.* Berkeley: University of California Press.

Giddens, Anthony. 1979. *Central Problems in Social Theory: Action, Structure and Contradiction in Social Analysis.* Berkeley: University of California Press.

Giddens, Anthony. 1984. *The Constitution of Society: Outline of the Theory of Structuration.* Berkeley: University of California Press.

Gnivecki, Perry. 1987. On the quantitative derivation of household spatial organization from archaeological residues in ancient Mesopotamia. In *Method and Theory for Activity Area Research: An Ethnoarchaeological Approach.* Edited by S. Kent, pp. 176–235. New York: Columbia University Press.

Goffman, Erving. 1951. Symbols of class status. *British Journal of Sociology* 2: 294–304.

Goffman, Erving. 1959. *The Presentation of Self in Everyday Life.* New York: Doubleday.

Goffman, Erving. 1974. *Frame Analysis: An Essay in the Organization of Experience.* Cambridge: Harvard University Press.

Goody, Jack. 1972. The evolution of the family. In *House and Family in Past Time.* Edited by P. Laslett and R. Wall, pp. 103–124. Cambridge: Cambridge University Press.

Goody, Jack. 1990. *The Oriental, the Ancient, and the Primitive: Systems of Marriage and the Family in the Pre-Industrial Societies of Eurasia.* Cambridge: Cambridge University Press.

Gossen, Gary H. 1972. Temporal and spatial equivalents in Chamula ritual symbolism. In *Reader in Comparative Religion, Third Edition.* Edited by W. A. Lessa and E. Z. Vogt, pp. 135–149. New York: Harper & Row.

Gulick, John. 1955. *Social Structure and Culture Change in a Lebanese Village.* New York: Viking Fund Publications in Anthropology 22.

Hage, Per. 1979. Graph theory as a structural model in cultural anthropology. In *Annual Review of Anthropology* 8: 115–136. Palo Alto: Annual Reviews, Inc.

Hage, Per, and Frank Harary. 1983. *Structural Models in Anthropology.* Cambridge: Cambridge University Press.

Haggett, Peter, and Richard Chorley. 1969. *Network Analysis in Geography.* New York: St. Martin's Press.

Hall, Gerald, Sam McBride, and Alwyn Riddell. 1973. Aşvan 1968–1972, architectural study. *Anatolian Studies* XXIII: 245–269.

Haller, Archibald. 1970. Changes in the structure of status systems. *Rural Sociology* 3: 470–487.

Hallet, Stanley I., and Rafi Samizay. 1980. *Traditional Architecture of Afghanistan.* New York: Garland STPM Press.

Hamilton, James W. 1987. This old house: A Karen ideal. In *Mirror and Metaphor: Material and Social Constructions of Reality.* Edited by D. W. J. Ingersoll and G. Bronitsky, pp. 248–276. Lanham, Maryland: University Press of America.

Hammel, E. A. and Peter Laslett. 1974. Comparing household structure over time and between cultures. *Comparative Studies in Society and History* 16: 73–109.

Hansen, Henny H. 1961. *The Kurdish Woman's Life: Field Research in a Muslim Society, Iraq.* Nationalmuseets Skrifter, Etnografisk Raekk, VII. Copenhagen: National Museum.

Harrell, Stevan, and Sara A. Dickey. 1985. Dowry systems in complex societies. *Ethnology* xxiv: 2: 105–120.

Hart, Gillian. 1992. Imagined unities: Constructions of "the household" in economic theory. In *Understanding Economic Process.* Edited by Sutti Ortiz and Susan Lees, pp. 111–129. Lanham, Maryland: University Press of America.

Harvey, Herbert R., and Isabel Kelly. 1969. The Totonac. In *Handbook of Middle American Indians, Volume Eight, Part Two, Ethnology.* Edited by E. Vogt, pp. 638–681. Austin: University of Texas Press.

Hasell, Mary J., and Frieda D. Peatross. 1990. Exploring connections between women's changing roles and house forms. *Environment and Behavior* 22: 3–26.

Hayden, Brian, and Aubrey Cannon. 1984. *The Structure of Material Systems: Ethnoarchaeology in the Maya Highlands.* Society for American Archaeology Papers 3.

Healan, Dan M. 1989. House, household, and neighborhood in a Postclassic city. In *Households and Communities.* Edited by S. MacEachern, D. J. W. Archer, and R. D. Garvin, pp. 416–429. Calgary: The University of Calgary Archaeological Association.

Hickey, Gerald C. 1964. *Village in Vietnam.* New Haven: Yale University Press.

Hillier, Bill, and Julienne Hanson. 1984. *The Social Logic of Space.* Cambridge: Cambridge University Press.

Hirth, Kenneth G. 1989. Domestic architecture and social rank in a Mesoamerican urban center. In *Households and Communities.* Edited by S. MacEachern, D. J. W. Archer, and R. D. Garvin, pp. 441–449. Calgary: The University of Calgary Archaeological Association.

Hodder, Ian. 1982. *The Present Past: An Introduction to Anthropology for Archaeologists.* New York: Pica Press.

Hopkins, M. R. 1987. Network analysis of the plans of some Teotihuacan apartment compounds. *Environment and Planning B: Planning and Design* 14: 387–406.

Horne, Lee C. 1980a. Dryland settlement location: Social and natural factors in the distribution of settlements in Turan. *Expedition* 22: 4: 11–17.

Horne, Lee C. 1980b. Village morphology: The distribution of structures and activities in Turan villages. *Expedition* 22: 4: 18–23.

Horne, Lee C. 1982. Rural habitats and habitations. A survey of dwellings in the rural Islamic world. In *The Changing Rural Habitat: Volume II, Background Papers.* Edited by B. B. Taylor, pp. 27–64. Singapore: Aga Khan Award for Architecture.

Horne, Lee C. 1988. The Spatial Organization of Rural Settlement in Khar O Tauran, Iran: An Ethnoarchaeological Case Study. PhD dissertation, University of Pennsylvania.

Hsu, Francis L.K. 1949. *Under the Ancestor's Shadow: Chinese Culture and Personality.* London: Routledge & Kegan Paul.

Hsu, Francis L.K. 1985. Field work, cultural differences, and interpretation. In *The Chinese Family and Its Ritual Behavior.* Edited by H. Jih-Chang and C. Ying-Chang, pp. 19–29. Taipei: Academica Sinica, Institute of Ethnology.

India, Census of. 1961. *Report on House Types and Village Settlement Patterns in India.* Government of India Publications.

Itoh, Teiji. 1980. *Traditional Japanese Houses.* Translated by Richard Gage. New York: Rizzoli.

Izikowitz, K. G., and P. Sørensen, eds. 1982. *The House in East and Southeast Asia: Anthropological and Architectural Aspects.* London: Curzon.

Jaafar, Syed Jamal, and Anthony R. Walker. 1975. The Akha people: An introduction. In *Farmers in the Hills: Ethnographic Notes on the Upland Peoples of North Thailand.* Edited by A. R. Walker, pp. 69–182. School of Comparative Social Sciences, Universiti Sains Malaysia.

Jaritz, Horst. 1973. Notes on Nubian architecture. In *Nubians in Egypt.* Edited by R. Fernea, pp. 49–60. Austin: University of Texas Press.

Jay, Robert R. 1969. *Javanese Villagers: Social Relations in Rural Modjokuto.* Cambridge: M.I.T. Press.

Jeremy, Michael, and M.E. Robinson. 1989. *Ceremony and Symbolism in the Japanese Home.* Honolulu: University of Hawaii Press.

Jones, Alice H. 1980. *Wealth of a Nation to Be.* New York: Columbia University Press.

Kamp, Kathryn Ann. 1982. Architectural Indices of Socio-Economic Variability: An Ethnoarchaeological Case Study from Syria. PhD dissertation, University of Arizona.

Kamp, Kathryn Ann. 1987. Affluence and image: Ethnoarchaeology in a Syrian village. *Journal of Field Archaeology* 14: 283–296.

Kawashima, Chūji. 1986. *Minka: Traditional Houses of Rural Japan.* Translated by Lynne E. Riggs. Tokyo: Kodansha International.

Kelly, Isabel, and Angel Palerm. 1952. *The Tajin Totonac. Part I: History, Subsistence, Shelter, and Technology.* Institute of Social Anthropology, Publication 13. Washington, DC: Smithsonian Institution.

Kent, Susan. 1990. A cross-cultural study of segmentation, architecture, and the use of space. In *Domestic Architecture and the Use of Space: An Interdisciplinary Cross-Cultural Study.* Edited by S. Kent, pp. 127–152. Cambridge: Cambridge University Press.

Kent, Susan, ed. 1990. *Domestic Architecture and the Use of Space: An Interdisciplinary Cross-Cultural Study.* Cambridge: Cambridge University Press.

Kent, Susan. 1991. Partitioning space: Cross-cultural factors influencing domestic spatial segmentation. *Environment and Behavior* 23: 438–473.

Khammash, Ammar. 1986. *Note on Village Architecture in Jordan.* Lafayette, Louisiana: University Art Museum, University of Southwestern Louisiana.

Khare, Ravindra S. 1976. *The Hindu Hearth and Home.* Durham: Carolina Academic Press.

Knapp, Ronald G. 1986. *China's Traditional Rural Architecture: A Cultural Geography of the Common House.* Honolulu: University of Hawaii Press.

Knapp, Ronald G. 1989. *China's Vernacular Architecture: House Form and Culture.* Honolulu: University of Hawaii Press.

Korn, Wolfgang. 1976. *The Traditional Architecture of the Kathmandu Valley.* Kathmandu: Ratna, Pustak, Bhandar.

Kowalewski, Stephen, Gary M. Feinman, Laura Finstein, Richard E. Blanton, and Linda Nicholas. 1989. *Monte Albán's Hinterland, Part II: Prehispanic Settlement Patterns in Tlacolula, Etla,*

and Ocotlan, the Valley of Oaxaca, Mexico. Ann Arbor: University of Michigan, Museum of Anthropology, Memoirs 23.

Koyunlu, Alpaslan. 1976. *An experimental ethnohistorical study of a house in the village of Munzuroğlu-Elâzig.* Keban Publication Series 1, No. 5, pp. 219–223.

Kramer, Carol. 1982. *Village Ethnoarchaeology: Rural Iran in Archaeological Perspective.* New York: Academic Press.

Krug, Sonia, and Shirley Duboft. 1982. *The Kamthieng House: Its History and Collections.* Bangkok: The Siam Society.

Kulp, Daniel H. 1925. *Country Life in South China.* New York: Teaching College, Columbia University.

Laslett, Peter. 1984. The family as a knot of individual interests. In *Households: Comparative and Historical Studies of the Domestic Group.* Edited by R. M. Netting, R. R. Wilk, and E. J. Arnould, pp. 353–379. Berkeley: University of California Press.

Lawrence, Denise L., and Setha M. Low. 1990. The built environment and spatial form. *Annual Review of Anthropology* 19: 453–505.

Layne, Linda. 1987. Village-Bedouin: Patterns of change from mobility to sedentism in Jordan. In *Method and Theory in Activity Area Research: An Ethnoarchaeological Approach.* Edited by S. Kent, pp. 345–373. New York: Columbia University Press.

Leach, Edmund R. 1961. *Pul Eliya: A Village in Ceylon.* Cambridge: Cambridge University Press.

Lebeuf, Jean-Paul. 1961. *L'Habitation des Fali, Montagnards du Cameroun Septentrional: Technologie, Sociologie, Mythologie, Symbolisme.* Paris: Librairie Hachette.

Lévi-Strauss, Claude. 1971. The family. In *Man, Culture, and Society.* Edited by H. L. Shapiro, pp. 333–357. Oxford: Oxford University Press.

Lévi-Strauss, Claude. 1982. *The Way of the Masks.* Seattle: University of Washington Press.

Levy, M. J. Jr., and L. A. Fallers. 1959. The family: Some comparative considerations. *American Anthropologist* 61: 647–651.

Lewcock, Ronald. 1976. Towns and buildings in Arabia North Yemen. *Architectural Association Quarterly* 8: 3–19.

Lewis, Oscar. 1958. *Village Life in Northern India.* Urbana: University of Illinois Press.

Lopez Alonso, Sergio, et al. 1982. *Caxhuacan Puebla: Las Condiciones de Vida en una Comunidad Totonaca.* Mexico: Instituto Nacional de Antropologia e Historia. NTIS, Colección Cientifica 124.

Lozach, J., and G. Hug. 1930. *L'Habitat Rural en Egypte.* Cairo: La Société Royale de Géographie d'Egypt.

Lynch, Kevin. 1960. *The Image of the City.* Cambridge: M.I.T. Press.

MacDougall, Robert D., and Bonnie G. MacDougall. 1977. *Sinhalese Domestic Life in Space and Time.* Cornell University South Asia Program.

MacEachern, Scott, David J. W. Archer, and Richard D. Garvin, eds. 1989. *Households and Communities.* Calgary: The University of Calgary Archaeological Association.

MacFarlane, Alan. 1976. *Resources and Population: A Study of the Gurung of Nepal.* Cambridge: Cambridge University Press.

Maclachlan, Morgan D., ed. 1987. *Household Economies and Their Transformations.* Lanham, Maryland: University Press of America.

Mahadev, P. D. 1976. Environmental aspects of folk architecture in rural India. In *Geographic Dimensions of Rural Settlements.* Edited by R. L. Singh, K. Singh, and R. Singh, pp. 206–213. Varansi: National Geographical Society of India.

Manrique C., Leonardo. 1969. The Otomi. In *Handbook of Middle American Indians, Volume Eight, Part Two, Ethnology.* Edited by E. Z. Vogt, pp. 682–722. Austin: University of Texas Press.

March, Lionel, and Philip Steadman. 1971. *The Geometry of Environment: An Introduction to Spatial Organization in Design.* Cambridge: M.I.T. Press.

Marshall, Yvonne. 1989. The house in northwest coast, Nuu-Chah-Nulth society: The material structure of political action. In *Households and Communities.* Edited by S. MacEachern, D. J. W. Archer, and R. D. Gavin, pp. 15–21. Calgary: The University of Calgary Archaeological Association.

Martin, Mary. 1980a. Pastoral production: Milk and firewood in the ecology of Turan. *Expedition* 22: 4: 24–28.

Martin, Mary. 1980b. Making a living in Turan: Animals, land, and wages. *Expedition* 22: 4: 29–35.

Mason, Roger S. 1981. *Conspicuous Consumption: A Study of Exceptional Consumer Behavior.* New York: St. Martin's.

Mazumdar, Sanjoy, and Shampa Mazumdar. 1984. How societal values affect architecture: A model based on the Islamic house in Iran. *Environmental Design Research Institute (EDRA)* 15: 47–58.

McCracken, Grant. 1988. *Culture and Consumption: New Approaches to the Symbolic Character of Consumer Goods and Activities.* Bloomington: Indiana University Press.

Michell, George. 1978. *Architecture of the Islamic World: Its History and Social Meaning.* New York: William Morrow.

Miller, Daniel. 1987. *Material Culture and Mass Consumption.* Oxford: Basil Blackwell.

Milliet-Mondon, Camille. 1981. La Maison Tharu de la Vallée de Dang. In *L'Homme et la Maison en Himalaya: Ecologie du Népal.* Edited by G. Toffin, L. Barré, and C. Jest, pp. 13–32. Paris: Centre Régional de Publications du Centre National de la Recherche Scientifique.

Milliet-Mondon, Camille. 1982. Certain aspects of housing in Nepal. In *The House in East and Southeast Asia: Anthropological and Architectural Perspectives.* Edited by K. G. Izikowitz and P. Sørensen, pp. 151–167. London: Curzon Press.

Misra, S. D. 1962. Settlements in a zone of transition. *Pakistan Geographical Review* 17: 19–42.

Moore, Henrietta L. 1986. *Space, Text, and Gender: An Anthropological Study of the Marakwet of Kenya.* Cambridge: Cambridge University Press.

Morgan, D. H. J. 1979. New directions in family research and theory. In *The Sociology of the Family: New Directions for Britain.* Edited by Chris Harris, Michael Anderson, Robert Chester, D. H. J. Morgan, and Diana Leonard, pp. 3–18. Sociological Review Monograph 28.

Morillon, Francis, and Philippe Thouveny. 1981. Villages et maisons de la Thak Khola. In *L'Homme et la Maison en Himalaya: Ecologie du Népal.* Edited by G. Toffin, L. Barré and C. Jest, pp. 200–219. Paris: Centre Régional de Publications de Centre National de la Recherche Scientifique.

Morris, Morris D. 1979. *Measuring the Condition of the World's Poor: The Physical Quality of Life Index.* New York: Pergamon Press.

Morrison, John A. 1939. *Alişar: A Unit of Land Occupance in the Kanak Su Basin of Central Anatolia.* Chicago: The University of Chicago Libraries.

Moya Rubio, Víctor José. 1988. *La Vivienda Indigena de México y del Mundo,* 3rd edition. Mexico: Universidad Nacional Autónoma de México.

Murdoch, Paul. 1981. Vernacular house form in Ladakh. In *L'Homme et la Maison en Himalaya: Ecologie du Népal.* Edited by G. Toffin, L. Barré, and C. Jest, pp. 261–278. Paris: Centre Régional de Publications de Centre National de la Recherche Scientifique.

Naroll, Raoul. 1970. Galton's problem. In *Handbook of Method in Cultural Anthropology.* Edited by R. Naroll and R. Cohen, pp. 974–989. Garden City, NY: Natural History Press.

Netting, Robert McC., Richard R. Wilk, and Eric J. Arnould. 1984. Introduction. In *House-*

holds: Comparative and Historical Studies of the Domestic Group. Edited by R. M. Netting, R. R. Wilk, and E. J. Arnould, pp. xiii–xxxviii. Berkeley: University of California Press.

Nishi, Kazuo, and Kazuo Hozumi. 1983. *What Is Japanese Architecture?* Tokyo: Kodansha International.

Norbeck, Edward. 1954. *Takashima: A Japanese Fishing Community.* Salt Lake City: University of Utah Press.

Oliver, Paul. 1987. *Dwellings: The House across the World.* Austin: University of Texas Press.

Orlove, Benjamin S., and Henry J. Rutz. 1989. Thinking about consumption: A social economy approach. In *The Social Economy of Consumption.* Edited by H. J. Rutz and B. S. Orlove, pp. 1–57. Lanham, Maryland: University Press of America.

Osgood, Cornelius. 1963. *Village Life in Old China: A Community Study of Kao Yao, Yünnan.* New York: Ronald Press.

Pader, Ellen J. 1988. Inside spatial relations. *Architecture and Behavior* 4: 3: 251–267.

Pasternak, Burton, Carol R. Ember, and Melvin Ember. 1976. On the conditions favoring extended family households. *Journal of Anthropological Research* 32: 2: 109–123.

Pellow, Deborah. 1988. What housing does: Changes in an Accra community. *Architecture and Behavior* 4: 3: 213–228.

Pelto, Pertti, and Gretel Pelto. 1975. Intra-cultural diversity: Some theoretical issues. *American Ethnologist* 2: 1–18.

Petherbridge, Guy T. 1978. Vernacular architecture: The house and society. In *Architecture of the Islamic World: Its History and Social Meaning.* Edited by G. Michell, pp. 176–208. New York: William Morrow.

Pignède, Bernard. 1966. *Les Gurungs: Une Population Himalayenne du Népal.* Paris: Mouton.

Plimpton, C. L., and F. A. Hassan. 1987. Social space: A determinant of house architecture. *Environment and Planning B: Planning and Design* 14: 439–449.

Popkin, Samuel L. 1979. *The Rational Peasant: The Political Economy of Rural Society in Vietnam.* Berkeley: University of California Press.

Pospisil, Leopold. 1963. *Kapauku Papuan Economy.* New Haven: Yale University Press.

Potter, Jack M. 1976. *Thai Peasant Social Structure.* Chicago: University of Chicago Press.

Potter, Sulamith H. 1977. *Family Life in a Northern Thai Village: A Study in the Structural Significance of Women.* Berkeley: University of California Press.

Ragette, Friedrich. 1980. *Architecture in Lebanon: The Lebanese House during the 18th and 19th Centuries.* Delmar, NY: Caravan Books.

Ragin, Charles C. 1987. *The Comparative Method: Moving beyond Qualitative and Quantitative Strategies.* Berkeley: University of California Press.

Rainer, Roland. 1977. *Anonymes Bauen im Iran.* Graz: Akademische Druck-U. Verlagsanstalt.

Rambo, A. Terry. 1973. *A Comparison of Peasant Social Systems of Northern and Southern Viet-Nam: A Study of Ecological Adaptation, Social Succession, and Cultural Evolution.* Carbondale: Center for Vietnamese Studies, Southern Illinois University.

Rambo, A. Terry. 1977. Closed corporate and open peasant communities: Reopening a hastily shut case. *Comparative Studies in Society and History* 19: 179–188.

Rapoport, Amos. 1969. *House Form and Culture.* Englewood Cliffs, NJ: Prentice-Hall.

Rapoport, Amos. 1977. *Human Aspects of Urban Form: Towards a Man–Environment Approach to Urban Form and Design.* Oxford: Pergamon.

Rapoport, Amos. 1981. Identity and environment: A cross-cultural perspective. In *Housing and Identity: Cross-Cultural Perspectives.* Edited by J. S. Duncan, pp. 6–35. London: Croom Helm.

Rapoport, Amos. 1982. *The Meaning of the Built Environment: A Nonverbal Communication Approach.* Beverly Hills: Sage.

Rapoport, Amos. 1989. On the attributes of "tradition." In *Dwellings, Settlements, and Tradition: Cross-Cultural Perspectives.* Edited by J.-P. Bourdier and N. Alsayyad, pp. 77–105. Lanham, Maryland: University Press of America.

Rapoport, Amos. 1990. *The Meaning of the Built Environment: A Nonverbal Communication Approach, 2nd revised edition.* Tucson: University of Arizona Press.

Rappaport, Roy A. 1971. Ritual, sanctity, and cybernetics. *American Anthropologist* 73: 59–76.

Rappaport, Roy A. 1979. *Ecology, Meaning, and Religion.* Richmond, California: North Atlantic Books.

Rassers, W. H. 1982. *Pañji, the Culture Hero.* The Hague: Martinus Nijhoff.

Redfield, Robert, and Alfonso Villa Rojas. 1939. *Notes on the Ethnography of Tzeltal Communities of Chiapas.* Contributions to American Anthropology and History 28. Washington, DC: Carnegie Institution.

Redfield, Robert, and Alfonso Villa Rojas. 1962. *Chan Kom: A Maya Village.* Chicago: University of Chicago Press.

Rege, Ashish, Sunil Saini, Bindia Thaper, and B. V. Venkatarama Reddy. n.d. *Better Houses with Mud, 2: An Approach to Contemporary Vernacular Architecture.* Bangalore: Indian Institute of Science.

Rengarajan, V. 1976. *Rural Housing in Tamil Nadu.* Madras: Sangam Publishers.

Reyna, S. P. 1976. The extending strategy: Regulation of the household dependency ratio. *Journal of Anthropological Research* 32: 182–198.

Richardson, Miles. 1974. Images, objects, and the human story. In *The Human Mirror: Material and Spatial Images of Man.* Edited by M. Richardson, pp. 3–14. Baton Rouge: Louisiana State University Press.

Robben, Antonius C. G. M. 1989. Habits of the home: Spatial hegemony and the structuration of house and society in Brazil. *American Anthropologist* 91: 570–588.

Rodman, Margaret C. 1985. Contemporary custom: Redefining domestic space in Longana, Vanuatu. *Ethnology* XXIV: 4: 269–275.

Rutz, Henry J., and Benjamin S. Orlove, eds. 1989. *The Social Economy of Consumption.* Lanham, Maryland: University Press of America.

Sahlins, Marshall. 1976. *Culture and Practical Reason.* Chicago: University of Chicago Press.

Sanjek, Roger. 1982. The organization of households in Adabraka: Toward a wider comparative perspective. *Comparative Studies in Society and History* 24: 57–103.

Schmink, Marianne. 1984. Household economic strategies: Review and research agenda. *Latin American Research Review* XIX: 3: 87–101.

Schrader, Heiko. 1988. *Trading Patterns in the Nepal Himalayas.* Saarbrücken: Verlag Breitenbach.

Scudder, Thayer. 1966. The economic basis of Egyptian Nubian labor migration. In *Contemporary Egyptian Nubia.* Edited by R. A. Fernea, pp. 100–142. New Haven: Human Relations Area Files.

Selby, Henry A., and Gary Hendrix. 1976. Policy planning and poverty: Notes on a Mexican case. In *Anthropology and the Public Interest.* Edited by Peggy R. Sanday, pp. 219–244. New York: Academic Press.

Selby, Henry A., Arthur D. Murphy, and Stephen A. Lorenzen. 1990. *The Mexican Urban Household: Organizing for Self-Defense.* Austin: University of Texas Press.

Sestini, Valero, and Enzo Somigli. 1978. *Sherpa Architecture.* Translated by Timothy Paterson. Paris: UNESCO.

Shafie, Zakia H. 1989. Informal housing versus public housing in Egypt. *Traditional Dwellings and Settlements Working Paper Series*, Volume 14, pp. 49–73. Center for Environmental Design Research, University of California, Berkeley.

Shah, A. M. 1974. *The Household Dimension of the Family in India: A Field Study in a Gujarat Village and a Review of Other Studies.* Berkeley: University of California Press.

Shami, Seteney. 1989. Settlement and resettlement in Umm Qeis: Spatial organization and social dynamics in a Jordanian village. In *Dwellings, Settlements and Tradition: Cross-Cultural Perspectives.* Edited by J.-P. Bourdier and N. Alsayyad, pp. 451–476. Lanham, Maryland: University Press of America.

Sharp, Lauriston, Hazel Hauck, Kamol Janlekha, and Robert Textor. 1953. *Siamese Rice Village: A Preliminary Study of Bang Chan, 1948–1949.* Bangkok: Cornell University Research Center.

Sircar, Kanika. 1987. The house as a symbol of identity. In *Mirror and Metaphor: Material and Social Constructions of Reality.* Edited by D. W. J. Ingersoll and G. Bronitsky, pp. 298–309. Lanham, Maryland: University Press of America.

Sivertsen, Dagfinn. 1963. *When Caste Barriers Fall: A Study of Social and Economic Change in a South Indian Village.* New York: Humanities Press.

Skinner, G. William. 1963. Marketing and social structure in rural China: Part I. *Journal of Asian Studies* XXIII: 3–43.

Skinner, G. William. 1971. Chinese peasants and the closed community: An open and shut case. *Comparative Studies in Society and History* 13: 270–281.

Skinner, G. William. 1977a. Regional urbanization in nineteenth-century China. In *The City in Late Imperial China.* Edited by G. W. Skinner, pp. 211–249. Stanford: Stanford University Press.

Skinner, G. William. 1977b. Cities and the hierarchy of local systems. In *The City in Late Imperial China.* Edited by G. W. Skinner, pp. 275–351. Stanford: Stanford University Press.

Smith, Carol A. 1976a. Causes and consequences of central-place types in Western Guatemala. In *Regional Analysis, Volume I: Economic Systems.* Edited by C. A. Smith, pp. 255–300. New York: Academic Press.

Smith, Carol A. 1976b. Exchange systems and the spatial distribution of elites: The organization of stratification in agrarian societies. In *Regional Analysis, Volume II: Social Systems.* Edited by C. A. Smith, pp. 309–374. New York: Academic Press.

Smith, Carol A. 1976c. Regional economic systems: Linking geographical models and socioeconomic problems. In *Regional Analysis, Volume I: Economic Systems.* Edited by C. A. Smith, pp. 1–63. New York: Academic Press.

Smith, Courtland. 1980. Community wealth concentrations: Comparisons in general evolution and development. *Economic Development and Cultural Change* 28: 801–818.

Smith, Michael E. 1987. Household possessions and wealth in agrarian states: Implications for archaeology. *Journal of Anthropological Archaeology* 6: 297–335.

Snow, Dean R. 1989. The evolution of Mohawk households, A.D. 1400–1800. In *Households and Communities.* Edited by S. MacEachern, D. J. W. Archer, and R. D. Garvin, pp. 293–300. Calgary: The University of Calgary Archaeological Association.

Spain, Daphne. 1992. *Gendered Spaces.* Chapel Hill: University of North Carolina Press.

Starr, Frederick. 1899. *Indians of Southern Mexico.* Chicago: Lakeside Press.

Steadman, J. P. 1983. *Architectural Morphology: An Introduction to the Geometry of Building Plans.* London: Pion.

Stevenson, Thomas B. 1985. *Social Change in a Yemeni Highlands Town.* Salt Lake City: University of Utah Press.

Storey, Rebecca, and Randolph J. Widmer. 1989. Household and community structure of a Teotihucan apartment compound: S3WW1:33 of the Tlajinga barrio. In *Households and Communities.* Edited by S. MacEachern, D. J. W. Archer, and R. D. Garvin, pp. 407–415. Calgary: The University of Calgary Archaeological Association.

Strathern, Andrew. 1982. Two waves of African models in the New Guinea highlands. In *Inequality in New Guinea Highlands Societies.* Edited by A. Strathern, pp. 35–49. Cambridge: Cambridge University Press.

Sung-hsing, Wang. 1985. On the household and family in Chinese society. In *The Chinese Family and Its Ritual Behavior.* Edited by H. Jih-Chang and C. Ying-Chang, pp. 50–58. Taipei: Academica Sinica, Institute of Ethnology.

Sutro, Livingston D. 1983. Changing Uses of Zapotec Domestic Space. PhD dissertation, University of Arizona.

Sutro, Livingston D., and Theodore E. Downing. 1986. Changes in the use of Zapotec domestic space. *Mexicon* 8: 4: 73–76.

Sweet, Louise E. 1960. *Tell Ṭoqaan: A Syrian Village.* Anthropological Papers No. 14. Ann Arbor: University of Michigan Museum of Anthropology.

Taeuber, Irene. 1970. The families of Chinese farmers. In *Family and Kinship in Chinese Society.* Edited by M. Freedman, pp. 63–85. Stanford: Stanford University Press.

Tambiah, Stanley J. 1969. Animals are good to think and good to prohibit. *Ethnology* 8: 423–459.

Thoumin, Richard. 1932. *La Maison Syrienne.* Paris: Librairie Ernest Leroux.

Thoumin, Richard. 1936. *Géographie Humaine de la Syrie Centrale.* Tours: Arrault.

Tjahjono, Gunawan. 1989. Center and duality in the Javanese dwelling. In *Dwellings, Settlements, and Tradition.* Edited by J.-P. Bourdier and N. Alsayyad, pp. 213–236. Lanham, Maryland: University Press of America.

Tringham, Ruth E. 1991. Households with faces: The challenge of gender in prehistoric architectural remains. In *Engendering Archaeology: Women in Prehistory.* Edited by J. M. Gero and M. W. Conkey, pp. 93–131. Oxford: Basil Blackwell.

Varanda, Fernando. 1982. *Art of Building in Yemen.* Cambridge: M.I.T. Press.

Veblen, Thorstein. 1899. *The Theory of the Leisure Class.* New York: Macmillan.

Villa Rojas, Alfonso. 1945. *The Maya of East Central Quintana Roo.* Washington, DC: Carnegie Institution.

Vogt, Evon Z. 1969. *Zinacantan: A Maya Community in the Highlands of Chiapas.* Cambridge: Harvard University Press.

Walker, Anthony R., ed. 1975. *Farmers in the Hills: Ethnographic Notes on the Upland Peoples of North Thailand.* School of Comparative Social Science, Universiti Sains Malaysia.

Warfield, James P. 1963. *House Architecture in Zinacantan.* Columbia–Cornell–Harvard–Illinois Summer Field Studies Program.

Warfield, James P. 1966. La arquitectura en Zinacantan. In *Los Zinacantecos.* Edited by E. Z. Vogt, pp. 83–207. Mexico: Instituto Nacional Indigenista.

Waterson, Roxana. 1990. *The Living House: The Anthropology of Architecture in South-East Asia.* Oxford: Oxford University Press.

Watson, Patty Jo. 1979. *Archaeological Ethnography in Western Iran.* Viking Fund Publications in Anthropology 57. Tucson: University of Arizona Press.

Watts, Carol M. 1989. Pattern language as a method for analysis: Case studies of Roman houses. *Traditional Dwellings and Settlements, Working Paper Series,* Vol. 11, pp. 29–47, Center for Environmental Design Research, University of California, Berkeley.

Wauchope, Robert. 1938. *Modern Maya Houses: A Study of Their Archaeological Significance.* Washington, DC: Carnegie Institution.

Weiss, Kenneth M. 1973. *Demographic Models for Anthropology.* Society for American Archaeology, Memoir 27.

Wenzel, Marian. 1972. *House Decoration in Nubia.* Toronto: University of Toronto Press.

Whetten, Nathan L. 1948. *Rural Mexico.* Chicago: University of Chicago Press.

Wiessner, Polly. 1989. Style and changing relations between the individual and society. In *The Meaning of Things: Material Culture and Symbolic Expression.* Edited by I. Hodder, pp. 56–63. London: Unwin Hyman.

Wilk, Richard R. 1983. Little house in the jungle: The causes of variation in house size among modern Kekchi Maya. *Journal of Anthropological Archaeology* 2: 99–116.

Wilk, Richard R. 1984. Households in process: Agricultural change and domestic transformation among the Kekchi Maya of Belize. In *Households: Comparative and Historical Studies of the Domestic Group.* Edited by R. M. Netting, R. R. Wilk, and E. J. Arnould, pp. 217–244. Berkeley: University of California Press.

Wilk, Richard R. 1989. Decision making and resource flows within the household: Beyond the black box. In *The Household Economy: Reconsidering the Domestic Mode of Production.* Edited by R. R. Wilk, pp. 23–52. Boulder: Westview Press.

Wilk, Richard R., ed. 1989. *The Household Economy: Reconsidering the Domestic Mode of Production.* Boulder: Westview Press.

Wilk, Richard R. 1990. The built environment and consumer decisions. In *Domestic Architecture and the Use of Space.* Edited by S. Kent, pp. 34–42. Cambridge: Cambridge University Press.

Wilk, Richard R., and Wendy Ashmore, eds. 1988. *Household and Community in the Mesoamerican Past.* Albuquerque: University of New Mexico Press.

Wilk, Richard R., and William Rathje. 1982. Household archaeology. *American Behavioral Scientist* 25: 617–639.

Wittfogel, Karl A. 1957. *Oriental Despotism: A Comparative Study of Total Power.* New Haven: Yale University Press.

Wobst, Martin H. 1977. Stylistic behavior and information exchange. In *Papers for the Director: Research Essays in Honor of James B. Griffin.* Edited by C. E. Cleland, pp. 317–342. New York: Academic Press.

Wolf, Arthur P. 1978. Gods, ghosts, and ancestors. In *Studies in Chinese Society.* Edited by A. P. Wolf, pp. 131–182. Stanford: Stanford University Press.

Wolf, Diane L. 1990. Daughters, decisions, and domination: An empirical and conceptual critique of household strategies. *Development and Change* 21: 43–74.

Wolf, Eric R. 1955. Types of Latin-American peasantry: A preliminary discussion. *American Anthropologist* 57: 452–471.

Wolf, Eric R. 1957. Closed corporate peasant communities in Mesoamerica and Java. *Southwestern Journal of Anthropology* 13: 1–18.

Wolf, Eric R. 1966. *Peasants.* Englewood Cliffs, NJ: Prentice-Hall.

Wolf, Eric R. 1984. Culture: Panacea or problem? *American Antiquity* 49: 393–400.

Wolf, Eric R. 1986. The vicissitudes of the closed corporate peasant community. *American Ethnologist* 13: 325–329.

Xinian, Fu. 1984. Survey: Traditional Chinese architecture. In *Chinese Traditional Architecture.* Edited by N. S. Steinhardt, pp. 10–33. New York: China Institute in America, China House Gallery.

Yalman, Nur. 1967. *Under the Bo Tree: Studies in Caste, Kinship, and Marriage in the Interior of Ceylon.* Berkeley: University of California Press.

Yang, Martin C. 1945. *A Chinese Village: Taitou, Shantung Province.* New York: Columbia University Press.

Yanagisako, Sylvia J. 1979. Family and household: The analysis of domestic groups. *Annual Review of Anthropology* 8: 161–205.

Yasa, Ibrahim. 1957. *Hasanoğlan: Socio-Economic Structure of a Turkish Community.* Ankara: Yoni Matbaa.

Yates, Timothy. 1989. Habitus and social space: Some suggestions about meaning in the Saami (Lapp) tent, ca. 1700–1900. In *The Meaning of Things: Material Culture and Symbolic Expression.* Edited by I. Hodder, pp. 249–262. London: Unwin Hyman.

Zhong, Yuanzhao, and Chen Yangzheng, eds. 1986. *History and Development of Ancient Chinese Architecture.* Beijing: Science Press.

Index

Apotropaic decoration, 138–139
Arnould, Eric J., 5
Axis mundi. *See* Canonical communication

Beardsley, Richard K., 113, 161, 172, 177
Bloch, Maurice, 103
Bourdieu, Pierre, 9, 10, 18, 108
Braudel, Fernand, 185–187
Buck, John L., 43

Campo, Juan Eduardo, 99
Cancian, Frank, 158
Canonical communication, 9–13, 18, 19, 79–114, 176, 181, 188, 192–196. *See also* Habitus; Houses, communicative aspects; Houses, symbolism in
Chandru, Uma, 46
Chang, Chih-I, 178
Cohen, Myron L., 113
Community
  burial, 133, 136
  central-place functions, 141
  closed, 147, 157–161, 172
  commercial orientation, 140–144, 152–153, 192
  corporate, 157–158, 172
  in (location)
    China (and Taiwan), 133, 135, 141, 142, 146–147, 178–179, 181, 191, 192, 195
    cores, 137, 151, 155–181, 192, 193
Community (*Cont.*)
  in (location) (*Cont.*)
    India, 45–46, 191–193
    Japan, 133, 177, 181, 191
    Java, 136
    Mesoamerica, 132, 136, 143–144, 155–157, 158, 181, 189, 191, 193–195
    Nepal, 192
    Pakistan, 133, 136
    peripheries, 137, 151, 155–181, 192
    Southwest Asia, 155, 193
    Thailand, 44–45, 191, 192
    Vietnam, 135, 136, 146–147, 181, 192
  integration, 129–136, 147, 157–158, 190–193, 196
  open, 157–161
  population, 136
  redistribution, 131–133, 136
  ritual, 133, 135, 136, 193
  shared poverty in, 158, 189, 194
  wealth differences in, 152, 153, 157, 158, 165–169, 172, 177–181, 187, 189, 192, 193
Comparative analysis, 23–24, 185, 192
Construction materials, 7, 15, 112–113, 188, 189, 196
Consumer behavior, vii, 7–8, 144, 188–190. *See also* Curatorial consumption; Marking services; Social economy of consumption

Core. *See* Community, cores; Household, cores
Cost of house, 28–30, 33
Cross-cultural analysis, 23–24, 190–191, 192
Curatorial consumption, 112–114, 188, 192, 194

Douglas, Mary, 10, 13, 18, 188
Dumont, Louis, 94
Duncan, James S., 195
Dunzhen, Liu, 43, 86

Ember, Carol R., 153, 172–174
Ember, Melvin, 153, 172–174
Ethnoarchaeology, 47

Fathy, Hassan, 170
Fei, Hsiao Tung, 86, 104, 178
Floor plan. *See* Graphical analysis of floor plan
Friedman, Yona, 25

Gallin, Bernard, 179
Galton's problem, 190–191
Gamble, Sidney D., 43
Gender-specific space use. *See* Canonical communication
Geomancy, 80, 81, 89, 90, 113–114, 196. *See also* Canonical communication
Giddens, Anthony, 10
Goffman, Erving, 11
Goody, Jack, 20, 102, 191
Graphical analysis of floor plan
  accessibility, 28–29
  accessibility rank, 34–36, 58–63, 164, 165, 170
  adjacency matrix, 34–36
  circuits, 32, 55–57, 164, 170
  complexity, 33–37, 58–64, 164–169, 170–171, 177, 180, 188
  connectivity, 28
  crossovers in, 30–31
  edges, 26
  hierarchical levels, 36–37, 58–59, 164, 165, 170
  integration, 32–33, 55–57, 164–169, 170, 180
  method, 24–31
  nodes, 26–27
  path matrix, 34–36
Graphical analysis of floor plan (*Cont.*)
  scale, 31–32, 51–55, 164–169, 170–171, 180
  segmentation, 33
  specialization index, 33–34, 58–63, 170
  transitional space, 28–30, 55–56
  See also Cost of house

Habitus, 9–10, 108, 110, 192–194. *See also* Canonical communication
Hage, Per, 25
Hall, John W., 113, 161, 172, 177
Haller, Archibald, 187
Han style, 81, 84, 86–87, 195
Hanson, Julienne, 25, 35
Harary, Frank, 25
Hickey, Gerald C., 90
Hillier, Bill, 25, 35
Hirth, Kenneth G., vi
Hodder, Ian, 117
Homogeneity theory, 158
Household
  coresidence, 5–6
  definition, 5
  domestic cycle, vi, 6
  economics, vi, 3, 5, 104, 106–108, 111, 112, 122–123, 136–144, 161–164, 173–181, 188–189, 194
  gender relations, vi, 8, 10, 12, 80, 104, 106–109, 111, 193
  generational differences, 10, 12, 80, 104, 181, 188
  in (location)
    Africa, 20
    China (including Taiwan), 5–6, 16, 102–104, 112, 137
    cores, 151–153, 155–181, 194
    India, 103
    Japan, 113
    Java, 131
    Jordan, 138, 178
    Lebanon, 138
    Mesoamerica, v, vii, 113, 189–190
    Nepal, 137–138, 153, 174, 179
    Nubia, 138, 153
    peripheries, 151–153, 155–181
    South Asia, 154–155
    Southwest Asia, 154, 178
    Thailand, 114

Household (*Cont.*)
in (location) (*Cont.*)
Turkey, 138, 178
Yemen, 138
joint utility, 8
postmarital residence, 6
size, vi, 165, 173–174, 177
social reproduction. *See* Social reproduction
social status, 17, 92, 94, 95, 112, 139, 142–144, 158, 161, 177–179, 192–194
social structure
complex, vi, 5, 6, 63–64, 102–104, 120, 172–176, 177, 180, 192–196
extended, 5, 102, 153, 172
houseful, 5
nuclear, 5, 63, 102, 114, 173–176, 189, 193, 194
ranking, 10, 12
study, vi, 3
Houses
basic, 111–112, 163, 164, 177, 178
communicative aspects, vii, 8–19. *See also* Canonical communication; Habitus; Indexical communication; Social boundary communication
complexity of. *See* Graphical analysis of floor plan
costly, 111–112, 163, 164, 165, 178
decoration of. *See* Houses, facade decoration; Houses, roof decoration; Indexical communication; Social boundary communication
design formality, 117–127
facade decoration, 12, 117–127, 138, 139, 193
iconic representation, 15
in (location)
Batammaliba, 9
China and Taiwan, 24, 42–43, 52, 55–64, 67–68, 73, 75, 80–88, 94, 96, 99, 102, 112, 120–121, 128, 139, 145, 159, 165, 179, 194, 195
Egypt, 47, 49, 95, 170–171
Iran, 47, 48, 64–66, 68–69, 101, 130, 166, 167
Iraq, 47
Japan, 12, 44–45, 89, 102, 113, 159, 160, 161, 172
Houses (*Cont.*)
in (location) (*Cont.*)
Java, 45, 88–89
Jordan, 49, 100, 138
Lebanon, 49, 100, 138
Mesoamerica, 49–50, 52–64, 66–67, 101–102, 113, 114, 120, 130, 139, 158, 159, 162, 194, 196
Moala, 9
Nubia, 12, 47, 49, 95, 99–100, 102, 121, 126, 128, 129, 138, 168, 170–171, 179
Pakistan, 48, 95
South Asia
India, 45–46, 52–64, 71–72, 90–96, 99, 102, 120, 121, 158, 161, 169, 194
Nepal, 45–46, 52–64, 69–71, 91, 94–95, 102, 120, 139–140, 146, 166, 168, 169
Sri Lanka, 46, 91, 92, 169
Southwest Asia
main series, 47–48, 52–66, 95–101, 120, 130, 139, 169, 179, 196
other, 48–49, 52–64, 68–69, 95–101, 120–121, 139, 169, 194
Syria, 47, 101
Thailand, 45, 72–74, 89–90, 102, 168, 171–172
Turkey, 47, 48, 138, 165
Vietnam, 44, 90–91, 102
Yemen, 49, 70–71, 101, 138, 140, 168
integration of. *See* Graphical analysis of floor plan
restrictions on variation, 159–161
roof decoration, 117–127
scale of. *See* Graphical analysis of floor plan
space use in, vii. *See also* Graphical analysis of floor plan
symbolism in, vii, 9–10. *See also* Canonical communication; Habitus
types, 159
See also Canonical communication; Graphical analysis of floor plan; Indexical communication; Social boundary communication
Hsu, Francis L. K., 43, 104, 112, 135, 159, 196

Human Relations Area Files, 38

Indexical communication, 9–14, 16–18, 117, 137–147, 153, 161–163, 166, 180, 189, 192–196. *See also* Houses, communicative aspects
Intracultural analysis, 24, 191
Isherwood, Baron, 10, 13, 18
Islamic houses. *See* Houses, Southwest Asia main series, Southwest Asia other, and Houses in Egypt, Iran, Iraq, Jordan, Lebanon, Pakistan, Yemen

Jay, Robert R., 88–89
Jones, Alice H., 187

Kamp, Kathryn A., 143
Kent, Susan, 33
Khare, Ravindra, 92
Kitchen, 96
Korn, Wolfgang, 139

Landlordism, 154–155, 169, 192–193
Late Imperial China, 151–152, 154
Liminal space. *See* Canonical communication
Lynch, Kevin, 119

MacFarlane, Alan, 146, 174
Market systems, 122, 152–155, 163, 176–181
Marking services, 10, 11, 19
Marriage, 105–106, 146
Material assets, 187
McCracken, Grant, 13, 18, 113, 144, 188
Miller, Daniel, 109
Model life tables, 26
Modernization, 195
Moore, Henrietta L., 18
Moral economy, 158
Morrison, John A., 113, 178

Netting, Robert McC., 5
Nodal region, 151–153

Orlove, Benjamin S., 8

Pasternak, Burton, 153, 172–174
Peasants, 4, 38, 185, 189, 190
Periphery. *See* Community, peripheries; Household, peripheries
Petherbridge, Guy T., 138, 139
Pignède, Bernard, 145–146
Potter, Jack M., 72, 90
Potter, Sulamith H., 90
Privacy, 28–29, 33

Rapoport, Amos, 8, 9
Rappaport, Roy A., 11, 18, 103
Rodman, Margaret C., 195
Rutz, Henry J., 8

Sahlins, Marshall, 9, 18
Sinicization, 196
Skinner, G. William, 151, 152, 154, 195, 196
Smith, Carol A., 152, 178
Smith, Michael E., 187
Social boundary communication, 11, 117, 124–136, 147, 189, 192, 194–195
Social economy of consumption, 8
Social indicators research, 186–187
Social linkage communication. *See* Canonical communication
Social reforms, 174
Social reproduction
  household continuity strategy, 7, 103–114, 127–128, 147, 175–176, 177, 180–181, 188, 192, 194
  household social reproductive strategy, 6–7, 19–20, 127, 154, 172–176, 180–181, 188
  neolocal strategy, 7, 103, 105, 110, 128, 175–176, 189, 193, 194
Standard of living, v, vii, 185–190
Status anxiety, 144–147, 161, 180, 189
Status uncertainty, 144
Structurally equivalent goods, 14–16

Vernacular architecture, 15

Ward, Robert E., 113, 161, 172, 177
Waterson, Roxana, 79, 117
Watts, Carol M., 119
Wauchope, Robert, 101
Weddings, 17
Westernization, 195
Wilk, Richard R., 3, 5, 7, 113, 158
Wittfogel, Karl A., 123, 196
Wolf, Eric R., 147, 161, 194, 195

Yang, Martin C., 88