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Introduction: investigating the European Neolithic

The expansion of food production as an economic strategy across Europe over 7,000 years ago marked the most radical transformation of prehistoric society in this region since the retreat of the last glaciation. An economy based on non-indigenous cultigens and domestic forms of both local and foreign animal species was established rapidly and successfully across a broad belt stretching from the Ukraine to France and subsequently expanded north to the Baltic and North Seas and south to the Alps (Fig. 1.1). In the course of this process, new environmental zones were exploited for the first time and new ecological adaptations were made by both indigenous and colonizing populations. The landscape of central Europe was markedly different from that found where agriculture had been previously established. Instead of the park-forest and steppe of the Near East and Balkans, the early farming cultures of Europe encountered a countryside which several thousand years later Tacitus would describe as “covered with bristling forests and foul swamps.” Beneath these superficial features lay a mosaic of soil types and landforms unlike any previously encountered by agricultural groups, including the loess blanket of the central European uplands and the glacially deposited soils of the North European Plain. The nature of the adaptations made by these early farming communities and their immediate successors, as well as the implications which these adaptations had for other aspects of human behavior, forms the subject of this book.

In the past 20 years, there has been a renewal of interest in the early agricultural communities of central Europe. Many large and important sites have been excavated and, more importantly, researchers have begun to adopt a regional perspective, focusing on many sites within well-defined study areas. There has been an increased interest in the recovery and analysis of subsistence data, although in many areas poor preservation conditions have hindered this pursuit. There has been an awakening of interest in topics such as trade and social structure, previously considered to be profitable areas of research only in connection with more complex societies. Finally, regional syntheses have appeared which combine many types of data to produce models of early farming societies.

All of this work has resulted in great strides in our understanding of the early agricultural communities of central Europe. Yet, despite this research, a coherent picture of early food-producing adaptations in central Europe has yet to emerge. This book presumes at least to make a start in that direction in that it considers the ecological adaptations of the early farming communities of this area and the implications of these adaptations for economic and social organization. As such, it

Cambridge University Press

978-0-521-10360-2 - Forest Farmers and Stockherders: Early Agriculture and its Consequences in North-Central Europe

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Excerpt

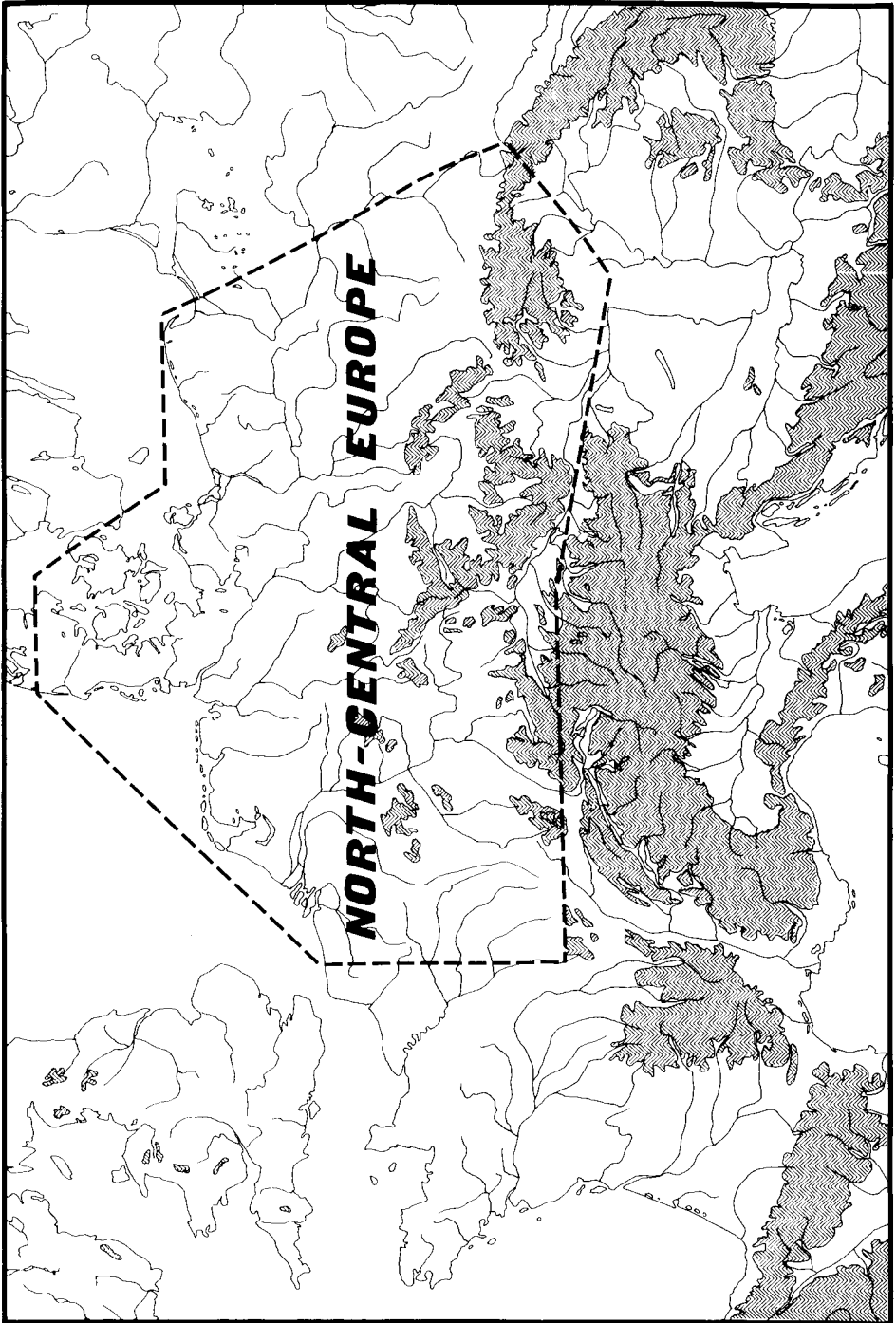
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Fig. 1.1 Map of temperate Europe showing area discussed in this book.

takes a particular theoretical approach, although many other interpretations of the same data are also possible. In writing this book, I have examined a number of current ideas about early agricultural adaptations in central Europe. Some have been found to make sense, while others have been found wanting. In the latter cases, I have tried to present alternative hypotheses which I believe fit the available data somewhat better. The term “hypothesis” is important and should be kept in mind by the reader throughout this book. Many of the current ideas of early food-producing adaptations in central Europe are untested hypotheses. Few, if any, have been subjected to rigorous verification. But at the same time, many of these hypotheses have replaced earlier ones, which have been subjected not to deductive testing but to the sometimes more demanding inductive procedure of considering how well they account for the available data. In the last 15 years, for instance, our ideas of the farming systems of Neolithic Europe have changed largely as a result of the generation of new data and the inability of the earlier hypotheses to account for these data.

A major aspect of this book will be its emphasis on the archaeologically observable dimensions of human behavior which bear on the social relationships of prehistoric communities. The modelling of subsistence and settlement systems is not viewed as an end in itself, but rather as an intermediate step in the understanding of Neolithic societies in central Europe. In bridging the gap between the archaeological record and the social dimensions of these cultures, it will be necessary to invoke models derived from other branches of anthropology and human ecology. The underlying rationale is not to seek direct analogies but to indicate that certain insights into the archaeological record can be derived from examining human responses to similar conditions of resource distribution, abundance, and scarcity.

Some words of explanation are in order concerning the selection of the geographical arena of this study, referred to here as “central Europe”, although “north-central Europe” would probably be more precise (Fig. 1.1). The underlying rationale was that it is the area in which the archaeological record between 4500 and 2500 bc is most directly related to the materials with which I had direct field experience. Moreover, it had a coherent set of well-defined environmental zones, namely the loess belt and the North European Plain. The Alpine Foreland of southern Germany and Switzerland should properly be included in such a study, but upon reflection I decided that lacking direct experience with the sites and materials (save for museum collections) I would be unable to write more than derivative synopses of the relevant data. My feeling, however, is that there are a number of parallels in the process of the establishment of agrarian communities between the North European Plain and the Alpine Foreland, an idea that a reader may wish to consider further.

Beyond palaeoeconomy

For a number of years, the study of early agricultural societies in central Europe has been focused on an “economic approach to prehistory.” As originally proposed by Grahame Clark in the 1950s, this approach represented a major departure from

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previous attempts at classification and systematics and provided a number of fresh insights into prehistoric lifeways in temperate Europe. As carried further by Eric Higgs and his students, the study of economic prehistory yielded a considerable corpus of new data and new analytical techniques for many parts of Mediterranean and temperate Europe. These include the systematic collection and analysis of faunal and botanical samples from many sites in specific regions and the development of interpretive approaches such as site catchment analysis.

The trajectory of palaeoeconomic studies, however, has led to two major shortcomings, especially from the perspective of anthropological archaeology. The first of these was the exclusive emphasis on subsistence questions and the reliance on subsistence alone as an explanatory framework. This resulted in a tendency to interpret most patterns of human behavior which left their traces in the archaeological record in a framework of “alimentary determinism.” This is not to argue that questions of subsistence did not play a major, if not key, role in much prehistoric decision-making. The issue is that they should not be seen as the sole factor that determined the configuration of the archaeological record. It is fair to note that many of Higgs’ students have taken up fresh approaches to prehistoric life which represent departures from the earlier subsistence-centered treatments, exploring topics such as resource exchange and social organization (e.g. Barker 1981).

The other fundamental shortcoming of many current approaches to economic prehistory is that it does not explore the social implications of its observations nor does it even consider them to be germane to the study of prehistoric change. This issue is addressed by Jarman, Bailey, and Jarman (1982: 4–5), who argue that since social behavior depends so much on economic behavior, and given the limitations of archaeological data, it makes more sense to limit the scope of the enquiry and the degree of direct causation sought by archaeologists. They maintain that “social factors ... seem to be of secondary rather than primary importance among the long-term determinants of human behavior” (1982: 5). Prehistory, in their view, must “perforce deal ... in terms of evolutionary forces and guiding principles which operate in the long term, while sociology and kindred subjects are constrained to concentrate upon the short term and proximate causative factors” (ibid.). It is interesting to note that whereas the original goals of economic prehistory, as articulated in the programmatic statements of Clark (e.g. 1953), were to bring prehistory *closer* to the study of culture, the recent emphasis on palaeoeconomy has taken much the opposite course.

There is, however, a different perspective that can be taken, which sees short-term, local variation as very interesting and as a necessary part of anthropological archaeology. In fact, it is largely through the study of such phenomena that cross-cultural generalizations can be made about human behavior in specific situations. Historically, anthropology, and with it anthropological archaeology, has been more interested in proximal causal factors rather than the broader factors which may have *conditioned* the nature of human adaptations. Although archaeology is in a unique position among the social sciences to examine long-term social change, it is just as valid to study changes that occurred over several decades or centuries as it is to examine major transformations that took millennia to complete.

Ecological approaches in anthropological archaeology

The theoretical position taken in this book is that cultural behavior can be understood in terms of its relationship to its natural and social environment. From the start, the social aspects of this relationship will be treated as being equally important as the relationship of the early European farmers to their natural environment. In this sense, this book represents somewhat of a departure from the traditional approach to ecological issues in European prehistory. Many studies of European archaeological problems which profess to have an “ecological perspective” have been primarily concerned with man-natural environment relationships, particularly in terms of the local flora and fauna. There has been a general tendency to equate an “ecological perspective” with a reconstruction of the *habitat* of the archaeological cultures in question. There are, of course, ecological aspects to habitat reconstruction, in that the flora and fauna of the prehistoric environment all interacted in some way, and thus formed a segment of the web of relationships that linked prehistoric man to his environment. Since many of these relationships were implicated in the subsistence behavior of human beings, there has been a tendency to equate the reconstruction of subsistence systems with the primary goals of an ecological approach to archaeological analysis.

The position taken here is drawn primarily from the agenda of recent ecological approaches in anthropology (e.g. Jochim 1979b, 1981; Hardesty 1977; Thomas, Winterhalder, and McRae 1979; Ellen 1982; Butzer 1983; Bronitsky (ed.) 1983; Minnis 1985). To some degree, their anthropological perspectives on ecology differ from those of strictly biological ecology in that they take cultural behavior into account. Human beings have any number of extrasomatic means of assuring their survival and for dealing with situations that threaten their survival. The natural environment presents a set of conditions to which human beings must respond and adjust. The study of these mechanisms for adjusting the relationships between humans and their environments forms the substance of much of ecological anthropology.

Jochim (1979b: 82) has pointed out that there are two fundamental approaches to ecological research in anthropology. The first entails a focus on the behavior of sociocultural systems as whole entities that are either stable or changing. The other involves the study of the behavior of various groups and individuals who make up these larger systems. Jochim argues that the first approach lends itself to the description of changes within the system, but that the second approach enables change to be understood and explained. He points out that change in human sociocultural systems is largely the result of “various groups and individuals pursuing different advantages and options with a variety of constraints and goals in a variety of natural and social environments.” The behavior of the system as a whole is largely the cumulative result of what can be viewed as a myriad number of individual and group microeconomic decisions in the face of environmental limitations and challenges.

Green and Sassaman (1983) have argued that the social and political dimensions of these decisions must be taken into account. The model that they propose has three interactive dimensions: political economy, resource management, and en-

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vironment. These three components have a dynamic relationship, changing themselves and causing change in each other. Political economy, in their view, is defined by the social and technological organization of the society in question, while the resource management patterns of that society manifest themselves in the subsistence and settlement systems. Both of these relate to each other directly as well as through the environment within which the particular cultural system operates (Fig. 1.2).

To a large degree, such a model provides the programmatic underpinnings of this book. Ecological models of early European agrarian communities must go beyond the study of the subsistence and settlement systems and encompass social and political aspects of these societies. The focal point of this book will be on the intersection of these three dimensions in order to try to better understand the adaptations of the earliest food-producing communities of central Europe. If palaeoeconomy can be considered to be the study of the acquisition, distribution, and consumption of resources, there will be a conscious effort made here to expand that perspective to include the decision-making processes and institutions which governed such resource procurement and allocation.

This book could also be called an attempt to define the “ecological niche” of the early European farming communities and to document the changes in that niche over the first 2,000 years of settled agricultural life in this area. “Niche” here is used in its ecological sense, in that it does not refer only to the *habitat* of the prehistoric communities but rather has a much broader meaning that includes not only the physical environment but also the functional relationships of these communities with other households and groups. Love (1977: 32) has defined the ecological niche of a human group as an “aggregate representation of the relations of its members to income-generating resources at a point in space and time.” He has identified the critical dimensions of the niche of a human group as land, water, labor, capital, space, and time. To these, I would add “information”, in that access to and control of this resource is often a critical aspect of the microeconomic decisions made to allocate other resources. It is the decisions made which allocate these resources which make up various behavioral subsystems, and it is the scarcity of these resources that leads to the problems whose solutions may often force evolutionary change in human culture.

Although the ecological approach described here portrays humans as interacting in a web of interrelationships with their natural and social environments, there are generally a number of behavioral subsystems which lend themselves to direct examination from this point of view. These include subsistence, settlement forms and patterns, demography, social organization, and political economy. Of course, these are themselves all linked together in this web, yet they can be considered to represent a sort of cumulative hierarchy of relationships. Subsistence can be viewed as the fundamental survival mechanism of the human organism, while political economy represents an adaptive strategy in which communities and regional populations engage within an environment containing neighboring groups of various sizes and organizational structures.

The links in this hierarchy are the decisions made by individuals and groups as

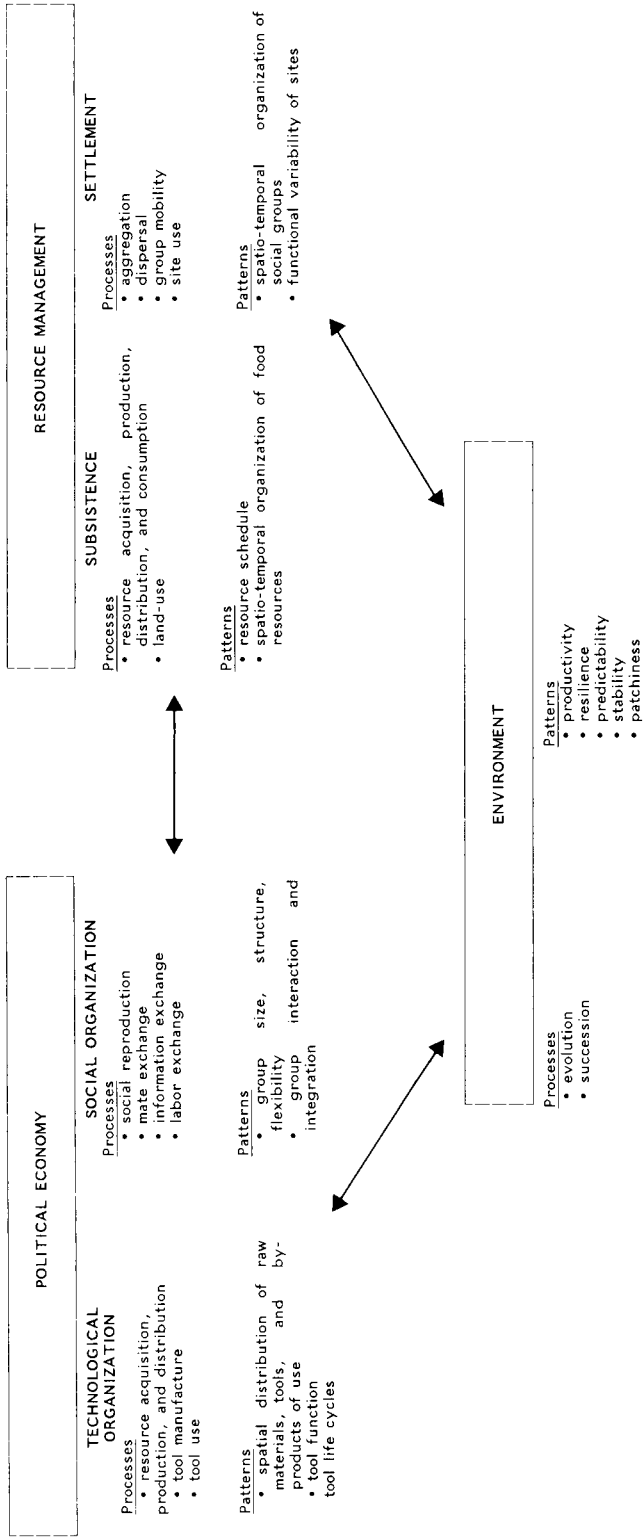


Fig. 1.2 The relationships among aspects of political economy, resource management, and the environment (after Green and Sassaman 1983: fig. 1).

they respond to challenges to their survival. These decisions are made on the basis of information and the goals and motivations of the individuals and groups involved. They may not necessarily be the best from a long-range strategic point of view, but rather they may be simply local, short-lived responses to ephemeral conditions. Thomas et al. (1979) have identified a number of categories of human behavioral responses to environmental conditions. These include avoidance, modification of environment, buffering, distribution, resistance, conformity, and systemic change. The selection of the appropriate response by an individual or group poses a set of problems whose solution raises further challenges to be addressed. Jochim (1979b: 105) has raised the possibility that cultural evolution may in fact represent a chain of solutions and secondary problems. If human cultural behavior is viewed as largely being problem-solving, the solutions to problems generally grow out of decisions made in the context of these types of responses. More than one response is often possible for a given problem, but the long-range implications of these responses may be markedly different. The solutions to problems may be interrelated themselves and may pose secondary problems to be faced.

This focus on human adaptation as the concatenation of solutions to environmental problems will be the underlying theme of this book. This issue is particularly germane to the early farming cultures of Europe, where small communities, employing a subsistence system which was largely alien to the environment of central Europe, were forced to make fundamental decisions which affected their survival as groups. These groups were not simply acting passively as a part of a larger system of agricultural dispersal but rather were faced with choices about crops, animals, settlement locations, settlement forms, resources, information, and a myriad of other variables. Individuals and groups were driven by different motivations and values, yet all were coping with very similar environmental characteristics.

Decision-making

The position taken in this book is that human cultural advances represent the cumulative results of decisions made in the face of stresses of various types. These stresses can be physiological, such as the results of famine or communicable diseases. They can also be social, resulting from conflicting expectations and motivations. Finally, they can be environmental, stemming from continental-scale climatic variation or from changes in local habitats. These stresses are essentially beyond the ability of human populations to suppress. Rather, when faced with specific stresses, as well as uncertainty about environmental conditions, human communities are presumed to have developed behavioral patterns which reduced the amplitude of these stresses and also made them more predictable in space and time. In one sense, this book is about the sorts of cultural buffers adopted by the Neolithic populations of central Europe in their efforts to cope with various types of stresses.

These decisions often involve microeconomic choices in the allocation of scarce resources. In this context, however, it is necessary to take an expansive view of

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what constitutes “economic” behavior. In our culture, it is generally thought that the maximization of expected utility lies behind such decisions. Other cultures, however, often place a greater value on things like prestige and rank. Some simply wish to minimize risk and uncertainty. Decisions made to cope with stress may involve trade-offs and compromises which do not reflect strictly “economic” considerations.

The nature of such responses to stress is conditioned by the decision-making system of a community or culture. Decisions can be made in climates of certainty, uncertainty, and risk (Levin and Kirkpatrick 1975). Certainty prevails when one can predict what will happen in the period affected by the decision, whereas in conditions of uncertainty, one can not determine the probabilities of a set of outcomes. Risk occurs in cases where the probability distribution of several possible outcomes, some more favorable than others, can be established. From a cultural standpoint, dealing with uncertainty would appear to be more crucial than dealing with risk, for the possibility of uninformed maladaptive choices is greater with the former. As certainty decreases, humans employ increasingly complex decision-making processes, but each time a decision is made, it limits the number of options available in the future. As a result, decisions are more often compromises among an array of competing prerogatives and choices.

The models of human behavior discussed in this book owe relatively little to optimization principles, such as the “Law of Least Effort” (Zipf 1949), which suggest that humans will organize their behavior so as to obtain the maximum return for a minimum of effort. Rather, the decision-making model of human social ecology used here presumes that households and communities will have to make compromises between a number of different factors. These decisions are complicated further by the unpredictability of resource locations and abundance, and still more by the fact that the operational environment of a human group is formed in terms of the group’s perceptions rather than actual conditions. The position taken here is that prehistoric decisions are basically rational, but that this rationality is not necessarily predicated upon the optimizing principles of modern “Economic Man” (see also Leibenstein 1976 for a discussion of what he calls “selective rationality”).

Such models of human adaptation are not completely novel in archaeological research. Isbell (1978) proposed a similar explanation to account for the development of state-level societies in the Andes, while Jorde (1977) and Minnis (1985) have examined buffering behavior in the Southwestern United States. Their models assume that there is an adaptive advantage to behavior which provides for interaction between geographically separated human populations, as well as the development of facilities to “even out” environmental fluctuations over time by the “banking” of key resources. It is not unreasonable to assume that similar issues faced the Neolithic inhabitants of central Europe. The question is how they responded in the context of the environmental and social conditions which confronted them.

Adaptive units

Throughout this book, it will be important to keep in mind the size of the human groups making the decisions which determined the nature of early agricultural adaptations in Europe. Clearly, individuals were ultimately responsible for the decisions themselves, but the issue here is the effective size of the groups that put these decisions into operation. Although individual initiatives were of fundamental importance, it was their effects on the behavior of larger groups that resulted in their impact on prehistoric society and the extent to which they are visible archaeologically.

Three levels of social groupings have been used by archaeologists to characterize the social units adjusting to particular circumstances. These can be termed the “culture”, the “community”, and the “household.” Such units cannot be used interchangeably, so it is important in any discussion to know the dimensions of the social units in question.

European archaeologists have been traditionally concerned with the adaptive strategies of archaeological cultures. Earlier definitions of the “culture” in European prehistory (e.g. Childe 1957: vi) have been expanded to include the subsistence system and settlement patterns which are associated with consistently recurring archaeological assemblages found in continuous geographical areas. There are two fundamental problems with this approach. The first is that it creates a sort of “package deal” mentality, as Barker (1976) has pointed out, in which “culture = economy.” In other words, finds of the material remains of an archaeological culture have been automatically assumed to constitute *prima facie* evidence for the practice of a particular subsistence strategy, where there is really no compelling reason to assume that this was actually the case.

The second, and more serious, problem with discussing prehistoric adaptations in Europe strictly in terms of archaeological cultures is that the culture is *an archaeological unit of study*. It is not necessarily a real social grouping, although many archaeologists have made the leap-of-faith to assume that a culture is a reflection of human group territoriality (as noted by Shennan 1978: 114). If the focus here is on adaptation as decision-making and problem-solving, then the archaeological culture is not the most useful unit of analysis, for it is not itself capable of behavior except of an exceedingly abstract sort. One cannot completely discard the concept, however, for the variation in material culture reflected in the Neolithic cultures of central Europe is nonetheless significant. It is simply that cultures cannot be taken by themselves as decision-making organizations.

Rather, the adaptive units which will have greater relevance for this study are the “household” and the “community.” It is in the contexts of groups such as these that the crucial decisions were made. Of course, it is not possible to speak of communities and households in the same degree of concreteness as seems possible with cultures, for as “real” social groupings, they represent an inference from archaeological data, not the archaeological data themselves. These smaller groups do not have names, nor can their exact bounds be precisely established. A household can be presumed to have been the equivalent of a residential group occupying a single Neolithic house with its associated features, while a community