

1 Introduction

This study is an investigation into the relationships between the manufacturing technology and the use of handmade pottery, through the analysis of samples from two settlements, Uitgeest-Groot Dorregeest and Schagen-Muggenburg I (province of North-Holland), both dating from the Roman period. It is expected that a comprehensive and integrated approach of ceramic *containers* can considerably increase the understanding of, and insight into the role of this material category in prehistoric societies. The study consists of two parts, each with its own research questions and purposes, that together form the basis of the third part, the overall aim of this study.

- 1 The investigation of different aspects of pottery manufacturing, to assess the know-how of the indigenous potters and the traditions in manufacturing techniques.
- 2 The investigation of vessel use, aimed at establishing the morphological categories and through these the formal categories of use, the functions, as well as the actual use of the pottery.
- 3 The overall aim is twofold:
 - a To establish to what extent and in which ways technological know-how was involved in making vessels with specific properties; are these properties geared to the use of the vessels and their significance within the communities concerned. It includes the question about the role of pottery within a specific cultural context.
 - b The development of suitable methods and techniques for each part of the research.

1.1 Background

The idea to study the interrelations between the technology of pottery production and the use of ceramic vessels in settlements had several sources, of which the following two were the most important. Firstly, my involvement as a student in the Assendelver Polder Project, the first large scale ‘New Archaeology’ project of the Institute of Pre- and Protohistory, University of Amsterdam. The project included the development of a theoretical and methodological framework for regional analysis. An important part of this project was the detailed technological analysis of pottery, led by Van der Leeuw. The goal was to establish a complete inventory of the pottery manufacturing technology in the settlements.

Both the discussions about how to approach pottery (Abbink 1983a, b; Van der Leeuw 1984) and the first results, though still only partially published (Van der Leeuw *et al.* 1987), formed an important basis for the ideas and methodology of this study. Secondly, as a student of human geography I became highly interested in social theory and its possible contribution to—the theory of—archaeology. This coincided with the important developments taking place in the late seventies and early eighties in the social sciences in general, when the established functionalistic approaches to human societies known as the ‘New Geography’ and the ‘New Archaeology’ were strongly criticized by neo-marxists and neo-structuralists. Personally, I was influenced most by the social theories of Giddens and Bourdieu, by structuralist human geographers such as Gregory and by the ‘post-processual’ work of Hodder. The new insights these social theories provided into the constitution of societies and the temporal-spatial aspects of human activities formed the subject of my master thesis (1984a). Lucky for me, Hodder as the first promoter of these views in archaeology was a guest-lecturer in Amsterdam at the time. The thesis, together with the confrontation with masses of ‘native’ pottery from the excavation of Uitgeest, led to a change in focus from the technological aspects towards the social-cultural values of ceramics. I became increasingly interested in the question what pottery was actually made *for*: what was it used for in prehistoric communities in daily life and/or in other contexts? This basic question was applied to many other categories of material culture (such as lithics) but hardly to the most ubiquitous of all, pottery, while this must have been an important category of utensils, certainly in later prehistory. The next question was how the use of pottery was connected with the technology of its manufacturing. This type of study, in which the relationship between the use of pottery and the technology ‘behind’ it were explored, was conducted mostly in ethnographic and ethnohistorical contexts. At the time only very few of such studies of pottery from archaeological contexts were available, despite Shepard’s classic *Ceramics for the Archaeologist* (1963). The lack of an ‘integrated’ approach to pottery in archaeology (Van der Leeuw 1984) has several reasons, not in the least the methodic problems involved, but is also due to the division of ceramic research

into many different fields with different aims. As an introduction to the theoretical model and the methodology developed in this study, the main types of ceramic research are reviewed briefly.

1.2 Pottery analysis in archaeology

Three major types of ceramic studies can be distinguished, each concentrating on different aspects of pottery for different reasons. The main fields are typological and technological analysis, the latter consisting of two major subjects, (1) the analyses of fabric composition, and (2) the analyses of manufacturing, especially construction techniques. Fabric research is subdivided into several fields, such as provenance and characterization studies, pyrotechnology and performance studies. The third field (3) is that of the (intended or actual) use of pottery, but this type of research was and still is unusual within archaeology.

1.2.1 STYLISTIC RESEARCH

By far the most common approach to style in material culture is the construction of typologies, with as their main purpose the dating archaeological features as well as the delineation of archaeological cultures in space. Such typochronologies of pottery are as old as archaeology itself and this tradition certainly has provided an important basis for archaeology. Many of these chronologies continue to be used in the praxis of archaeology, independent of changing views on culture and material culture. Especially older typologies have often been constructed through an intuitive and inductive approach to style: the researcher ‘recognized’ stylistic differences and similarities within material assemblages (the ‘intuitive types’, Spaulding 1978). These typochronologies are empirical constructs, and do not have a theoretical or formal basis. For ceramics, typological research usually concerns those variables which define some aspect of the form or shape of pottery, such as rim-, shoulder- and base-forms, and/or aspects of decoration. In whatever way typochronologies are constructed, they contribute little or nothing to an understanding of style in the context of the societies concerned, of what style is, what it represents and why it changes, nor to an understanding of the importance of pottery as a use-category in human societies.

With the rise of the New Archaeology, these questions became a new direction and focus of research. Style, especially decoration, was seen as a message, as information to be exchanged at different levels, from socio-cultural identities to social status of individuals. Many different and sometimes conflicting theories were formulated about the definition and role of style. A prominent example is the Sackett-Wiessner debate and all reactions which followed (Conkey 1990; Sackett 1985, 1990; Wiessner 1983). The

debates led to a greater insight into the complexity of the concept and the use of style in relation to human behaviour, yet mainly resulted in more emphasis on methods. Many of the older typologies were post hoc subjected to formal classification methods in the seventies, leading to an intensive debate on such methods, exemplified by the volume edited by Whallon & Brown (1982). Central themes were the question of lumping or splitting of artefacts (*i.e.* generalizing versus specifying) and object versus attribute clustering. I will not delve into the ins and outs of this debate here as they are supposedly familiar to the reader. In my view, these methodological problems can be approached more satisfactorily through the theory and model outlined below. Another reason for the lack of progress in stylistic studies within New Archaeology is the emphasis on *the function or effect of style* rather than on its *constitution and meaning*, in other words on what style ‘did’ rather than what it ‘was’. Although the complexity of the approaches increased, style continued to be treated *as if* it directly reflects behaviour and social status (*e.g.*, Voss & Young 1996). In combination with the goals of processual archaeology this also led to an overemphasis on spatial distributions of artefact types (themselves not questioned) or of stylistic attributes.

It was through the renewed interest, generated by the ‘post-processual’ theorists like Hodder and Miller that the theory of style became important once more in archaeological theory, but now in a more encompassing way. Style is approached as a meaningful and culturally specific aspect of material culture, but one which is always interwoven with other aspects thereof, such as its use or meaning in social relations. This concept of material culture and style also forms a link with typologies, because it can explain why these seem to ‘work’. It is exactly this specific cultural content of material culture which is recognized by the observer¹.

In this context, it should be mentioned that another, more technical aspect of ceramics, the types of temper employed, is also used as a criterium in typochronologies. As the tempering *materials* often change with time, they are used as a dating device as well. Temper is then treated as if it were a stylistic variable, but its value as an indicator for technological know-how and/or the function of pottery is ignored. This is the case for most typologies of prehistoric pottery in the Netherlands. Here, temper will be studied as a technological variable in relation to the functions of the pottery.

1.2.2 TECHNOLOGICAL RESEARCH

Fabrics

The analysis of fabrics has been practised for a long time and in many different forms, but the two main purposes are

provenance and characterization. Provenance studies try to establish sources of the clay and through this the location of the pottery production. They usually aim to establish trade or contact between regions, and/or to aid the dating of pottery assemblages. Characterization studies are concerned with the variations in fabrics within an assemblage. The results are used for different purposes: to establish the relationships with pottery functions or technology, etc. A third and related field is that of the pyrotechnology, the duration and temperature of firing which can be deduced from the specific properties of the fabrics.

For all of these analyses a multitude of—mostly specialist's as well as costly—techniques is available². Only the textural analyses of thin sections are often carried out by archaeologists themselves. Of more value to the aims of this study are the (macro-)studies of the raw materials, including temper, viewed as an indication of *choices* made by potters, and through this of their technological know-how of fabric properties in use. Shepard demonstrated as early as the fifties that in principle and in practice such choices are connected to the prospective use of the vessels, and many ethnographic studies proved the point. The choice of clays, and especially of tempering materials, influence or even determine the properties of the finished and fired products, notably their strength in use. Analyses of the fabrics are therefore important, not primarily as a dating device, but as a means to establish the relation with the use of ceramic vessels in actual practice. These so-called performance studies of the properties and strength of fabrics in different types of use are discussed in detail in chapter 2 and appendix 2.1.

Some of the general methodological problems and limitations of fabric studies have received ample attention in journals like *Archaeometry*, while other ones, more relevant to this study, have not. Much has been written, for example, about the large number of techniques to establish the chemical and mineralogical composition of clays, about techniques to analyze the texture and structure, as well as about sampling methods³. Most of the techniques have the same drawbacks:

- Measurements of elements or minerals deal with the total fabric composition and cannot discriminate between clay, natural inclusions and temper. Such a distinction however is crucial for establishing the manipulations of the basic clay and paste by potters, as well as the choice of temper, in relation to fabric properties.
- Usually only very small samples, taken out of vast collections of pottery, are analyzed, but a large number of different micro-analytical techniques are used. With these techniques, moreover, only very small amounts of fabric are investigated, thereby increasing chance-variation in the results. Variations in composition can easily be caused

by a coincidental presence or absence of inclusions, especially if these are relatively large⁴.

- It sometimes seems that the characterization of fabrics becomes an aim in itself. The results of fabric studies are far from self-evident, however, and need to be interpreted *archaeologically* for each assemblage. It is to be expected that there will always be a certain variation in fabrics, even within a homogeneous assemblage. When also taking into account the large number of variables which influence the composition and properties of fabrics, it is questionable whether the modern precision with which we analyze these at the molecular level is at all relevant, especially for the reconstruction of the potter's know-how and choices. It is argued here, that the study of fabrics should be carried out from the 'potter's point of view' and be aimed at the specific knowledge of the potters within a certain society. Such a starting point has consequences for the choices of methods and techniques, and for the level of detail in their application, which are further discussed in chapter 2.

Manufacturing techniques

The study of manufacturing techniques, from raw material to finished product, and in particular of construction techniques, has grown considerably in importance since the late seventies. Such investigations are often supported by experimental reconstructions. The manufacturing process forms a basic part of this study, because in the process—including firing the pottery—the potters create all of the specific qualities and characteristics of a vessel which in turn can be studied by the archaeologist. The reconstruction of the logics and logistics of the potter's craft thus can be informative for many aspects of ceramics. It can provide data on the range and depth of technological know-how as well as on the specifics of style, on the expected use of a vessel and finally on the organisation of the production, the position of the potter within the society and the way products are distributed. The many ethnographic studies on this subject are witness to this (*e.g.*, DeBoer & Lathrap 1979; David & David-Hennig 1971; several articles in Van der Leeuw & Pritchard 1984; Krause 1984). How all of these aspects are interrelated to the manufacturing process will be further discussed in chapter 2.

1.2.3 STUDIES OF VESSEL USE AND CERAMIC INVENTORIES

Research on the use of ceramics has increased considerably over the last fifteen years, although most studies are still conducted on ethnographical and ethnohistorical assemblages. They nevertheless are a major contribution to investigations of the possible uses of pottery in prehistoric communities and to the recognition of different use categories. These studies also provide information about the

composition of household inventories and the 'use-life' or break-frequencies of specific vessel categories. *Inventory compositions* represent to some extent the type of functions, as the formal or intended use, of pottery that are distinguished within a community, while the break-frequencies or *replacement rates* form indications for the type and frequency of actual use. Such information is an important basis for modelling the use of ceramics for similar activities in archaeological contexts. This field of research is also reviewed more extensively in chapter 2.

1.2.4 STUDIES OF POTTERY FROM THE ROMAN PERIOD IN THE NETHERLANDS

The stylistic analysis of pottery from this period was and is the most frequent type of research. Typologies are based mainly on rim forms and/or decoration, to a lesser extent on overall form of ceramic vessels, and all are mainly used as dating devices. Four studies were available at the start of this study, three of which concern assemblages from the northern and eastern Netherlands (Van Es 1965, 1968; Waterbolk 1962, 1977), the fourth from the western Netherlands (Bloemers 1979). The studies by van Es and Bloemers are based on pottery from one site, the settlements of Paddepoel, Wijster and Rijswijk respectively, while that of Waterbolk involves pottery from several sites, including urnfields in the northern coastal region. Recently a number of new studies were published for both regions (Bosman 1997; Meffert 1998; Taayke 1990, 1996-7). Although Taayke improved the typology, its chronological value is still limited for the first four centuries AD. The main reason is that pottery from the northern and western Netherlands shows very little stylistic variation in the traditional sense. As in most parts of the Netherlands, decoration practically vanished at the end of the Late Iron Age. Occasionally decoration is present on the exterior surfaces, consisting of 'streeppand' (from one to three grooves) around the neck and fingertip- or line decorations on the shoulder. Another form is two to three parallel indentations in the purposely roughened surfaces (called 'besmeten'). Impressions of fingertips, nails and tools on the rim are seen more frequently and are regarded as decoration as well. The forms of the pottery from this period and these regions are rather simple and uniform. Because there is some variation in the shape of the rims, rim types form an important criterium in these typologies; the most formal classification is the one by Bloemers (1978). Many other variables such as the type of temper, the colours, the shape of the rims, etc, are also used to define different (sub)groups. Each of the authors puts different weight to different criteria⁵. Only in the recent studies the variable 'size' is used as well. The problem with all of these studies is that there is no evaluation of the possible reasons for, and meaning of the observed variations, like their technical, functional or

cultural meaning. Yet, despite the differences in classification methods, the resulting typologies for the northern and western regions of the Netherlands are largely similar. Such similarities can possibly be interpreted as the expression of *shared traditions* at the regional or even supraregional level for the characteristics of ceramics. The local variations are discussed by the authors mainly in terms of exceptional shapes and variations in the percentage of decorated rims and the chronological value of these traits. These comparisons are as yet of little value for determining which variance can be tied to specific local traditions within the regional ones.

An important aspect of the settlements in the western and northern Netherlands is the vast amount of pottery that is found in these sites. Although no exact data are available, the general impression is that the amount of sherds from a unit of excavation has increased exponentially in the Roman Iron Age compared to the previous period. Large amounts of sherds were re-used as raising or covering material, as in the platforms in the Assendelver Polders (Therkorn & Abbink 1987) and Schagen (Therkorn 1990/1). Large numbers of raised areas were also found on Texel (Woltering 1996-7)⁶ or were used as part of ritual depositions (Therkorn, forthcoming). The ubiquity suggests that either more pottery was used and/or used more intensively in the Roman period than before, and by implication its production must have increased as well. It is not at all clear why this is the case. In comparison with the later Iron Age, other aspects of pottery traditions also changed drastically in this period; as mentioned, decoration virtually disappears and there is a change in the repertoires of form (open, one partite forms and bowls only occurring sporadically in the Roman period), while the temper changed from grog to organic material.

1.2.5 RELEVANCE TO THIS STUDY

All of the above approaches have made important contributions to the archaeology of material culture. The perhaps most important limitation is the *division* of the field of ceramic studies into so many different parts, each with their own goals and methodology. Although there are many attempts to integrate data from the different fields, there still is a marked gap between, for example, fabric analyses and the study of vessel forms or vessel use, unlike in ethnographic research. Moreover, studies concerning the actual use and meaning of pottery within a specific community or society are still rare. There were and are of course many exceptions. In the late seventies and early eighties, several studies were published in which technological research was combined with that of function or use of pottery. One of these was the historical study by Bruyn (1979) of Medieval pottery from the southern and central Netherlands. The production cycle model in chapter 2 is

directly inspired by this study and also by the model of Van der Leeuw (1984); the similarity between his and my title is not a coincidence. Within the Assendelver Polders Project the construction and forms, especially those of the shoulders and rims were studied in exhaustive detail. On the basis of the results, the number of variables as well as the level of detail for the analyses of manufacturing techniques could be drastically reduced. The Institute for Ceramological research in Leiden has already a long tradition of integrated research on technology and function, as witnessed by the articles in the *Newsletter*, and Franken's work (e.g., 1974; 1982) has been inspiring for this study. While all studies mentioned were important, my theoretical approach is different.

1.3 Theoretical background

To gain insight into the overall significance of ceramics requires not only an *integration of different types of data*, but also a *theoretical framework* in and through which the different aspects of ceramics can be defined and connected. The framework and the research model of my study are directly derived from the so-called 'post-processual' theories in social sciences and archaeology, as these theories represent the desired integrated approach to human societies and material culture. The theoretical background as presented here is a summary discussion of the most important and relevant concepts and views of structuration theory, or the theory of practice. These views and the methodological consequences for material culture research will be further specified for pottery in chapter 2.

1.3.1 GENERAL CONCEPTS OF STRUCTURATION THEORY

The theory of structuration (Giddens 1979), or the theory of practice (Bourdieu 1977), and its consequences for social studies is complex and simple at the same time. Partly a reaction on the 'processual' theories of the 60s and 70s, the starting point of these approaches is the empirical notion that all human societies/cultures are to some extent specific and unique. The question is *why* they are unique and *how* this specificity is brought about, in other words, how specific societies are constituted. The most fundamental goal of the structural approach is then to formulate a general theory to explain the specificity of human societies, instead of their supposedly universal characteristics. Consequently, it sets a different goal for social sciences: the understanding of and insight into the complexities of such societies, instead of their abstract explanations with a cross-cultural value (Gregory 1978). As by now most archaeologists are familiar with some of the literature, this presentation is restricted to the most fundamental concepts. The importance for archaeology lies in the new possibilities for research strategies, and especially for interpretation: hence the new name

'interpretative archaeology' (Hodder 1995). The concepts to discuss first are agency and culture, structures and social order, and the related notions about practices and duality, followed by habitus, institutions and tradition. The now familiar terms in the archaeological jargon are so basic to the model used here that I have to bore the reader with my view of them.

The concept of *agency* is expressing specific notions about the relationship between individuals and their society. The two are neither identical nor wholly independent; instead the relation between the individual and society is recursive or dualistic. This simply means, that a society is more than the sum of its members and its members are more than a reflection of the societal 'whole'. Any individual is a socially constituted individual and a *social actor*, but is so in his or her own way. The guidelines for all actions are the societal framework or social structures, which are in turn constituted by the actions and interactions of the individual agents. This duality or recursiveness of the 'individual' and the 'society', and of action and structure is a fundamental concept, because it constitutes the bridge over the subject/object dichotomy which has long plagued social theory. To be clear, this view is *not* concerned with the individual as a specific person, as in Mrs X or Mr Y. On the contrary, structuration theory is concerned with the *shared* social characteristics of individual agents and their actions and stresses the systematics in these recursive relations (Giddens 1979; Rapoport 1993). The reason that individual agents will act and behave in similar ways is that actions take place within a shared socio-cultural framework, defined as structures or structural principles. All this is of course especially relevant to archaeology, because we are rarely able to study any specific person.

Also of importance for archaeological theory is the concept of human culture. Re-instating the traditional concept of culture as a *specific and meaningful whole* (Hodder 1982b) it is perceived as a framework of values, norms and beliefs which guide people's interpretations of the world around them, including the created world of material culture, and through this also their actions and behaviour. This meaningful framework for interpretation and perception is clearly an important factor in the constitution of societal structures.

The concept of structure is derived from the older structuralist approaches in sociology, anthropology and linguistics. Structures are defined by Levi-Strauss as the 'backcloth of society'; by Giddens (1979, 60-68) as 'a set of principles or rules and resources' and as 'a set of dispositions' by Bourdieu (1977, 76). Within archaeology, the notion of structure as the 'grammar of social text' is often found (Hodder 1986; Tilley 1994), but in my view does not quite cover the original terminology. Structural principles are

formed through the universal habit of humans to categorize the world around them to create some kind of order in that world. This *categorization or ordering* can be done by a number of means or principles, but all are ways to define similarities and differences in a coherent, ordering fashion (Hodder 1986, 134). Most of these concepts are expressed in language and language is therefore one of the basic means to create, share and pass on common notions and values. As the categorization and ordering is carried out by humans through their living-together, it is also a social construction, again with the quality of recursiveness (Giddens 1979, 44, 49-73). The definition of categories of materials for example, or the definition of their 'usefulness' for specific purposes is always at the same time a *valuation* in that they are given value and meaning within the complex whole⁷. Structures are thus defined as a historical and recursive notion: they are the result of the actions of individuals in their co-habitation, but at the same time form the basis for actions. People, as agents, together create their own specific social orders, the framework of social rules or principles, which are used and reproduced in actions. Perhaps needless to say, much of this framework is operative at the subconscious level.

The structuring principles and the resulting social order constitute the social or rather societal structures and both are the basis for systems of (inter)actions or practices, or practical logic (Bourdieu 1977, *passim*). The realization of categorization and ordering processes is expressed in Bourdieu's concepts of practico-logic taxonomies and classifications, whereby logic is the internal cultural logic. "Practical taxonomies (are) instruments of cognition and communication which are the precondition for the establishment of meaning and the consensus of meaning" (Bourdieu 1977, 97), while mythico-logic classifications are the transformations of the mythical structure of the social order, the universe of meaning and symbolic relations (123). This concept is close to that of symbolisation and symbolic orders of Giddens (1979, 106-109), who considers the latter as the (trans)formation of specific meanings into symbols and symbol systems, that have a 'surplus' of meaning, in certain contexts. Both types of taxonomies can also be seen as 'theories of knowledge' (Bourdieu 1977) and are of course dialectically related to each other. In this respect the theories also touch upon the hermeneutic problem—in science—, see below.

The above concepts are basic to a series of notions and insights into the constitution of society and the organisation of activities and relations between individuals within them. Most important is that any group of people produce and reproduce their own specific reality, which is always a combination of empirical, visible, and invisible realities. The latter idea is nothing new of course, but the crucial difference

with some of the older notions is that the ideational cannot and should not be separated from the empirical and/or considered a black box. Instead theory should focus on *the ways in which both realities are constitutive of each other* and are constituted together. This, compared to processual views, fundamental shift in focus is crucial for the development of archaeological theory and also concerns material culture. The key word in the construction of realities is the concept of *praxis or practices*. In practices all of these interrelations, between agent and structure and between empirical and structural reality are defined and given shape. Social and cultural practices are the ways in which people, as knowledgeable agents, organize their activities and their relationships in everyday life as well as the meanings attached to them. The concept of praxis also represents the idea that the ways of doing things are not impromptu but systematic and repetitive, because they are structured by specific principles⁸. In the organization and communication in daily life, agents *transform* the shared ideas, norms and values into specific systems and practices. Thus systems are the outcome, the transformation of structures in empirical reality. This also means that the structuration processes ought to be seen as continuous and ongoing in any society⁹. At the same time, the constant use of structures in action, the reproduction of structural principles, can explain why practices will tend to become institutionalized and turned into traditions.

Habitus, institution and traditions

Many of the above views are combined and crystallized in Bourdieu's concept of *habitus* and that of *routinisation*¹⁰ and institutionalization by Giddens (1979). Bourdieu defined habitus in several, always very complex ways, but it is usually understood as systems of durable, transposable dispositions, available to the agents at any time (Bourdieu 1977, 72; Gosden 1994, 117). Habitus is the usually 'unquestioned' basis, the existing social-cultural order, for routine systems of actions and behaviour in daily life, not only of individuals, but also of the collective. The routine, habitual ways of each member can be understood by all members of a society. Habitual behaviour is defined and takes place at different levels, but certainly at the daily practice on a local and individual scale. The—empirical—fact is that in all societies habitual behaviour is the basis for everyday life. Social contacts in daily life tend to be fixed in specific fields of actions and relations. Thus habitus and routinisation lead to institutionalizing and tradition, to traditional practices. Giddens and Bourdieu both stress the enabling, capacitating quality of rules and habitus in their work, although they are not blind to the other side, the crippling and disabling quality, as for example in totalitarian regimes. But while the anthropologist in Bourdieu stresses

the durability of objectified structures and habitus, Giddens, the sociologist, puts much more emphasis on the subjectivity and inherent potential for change in practices through structuration as a continuous process.

The theoretical and empirical considerations of how habitual, traditional, practices come into existence, are perhaps the most important contribution to archaeological theory. The goal of archaeology has often been defined this way in textbooks (such as Renfrew & Bahn, 1991), the possibility to study long term developments of human systems through their material remains. Clearly this is possible only if such systems are characterized by 'long term' traditions, even when these are created in and through short time experiences and practices. As humans tend to view larger societal structures as fixed and given, this reinforces the reproduction of such structures by agents in daily life. Habitus is therefore also *history turned into nature* (Bourdieu 1977, 82), the socially constructed reality being experienced as a 'natural' order. As Gosden (1994, 10-12) argued, the natural order includes the material culture, because much of it has an "enduring quality: social landscapes, buildings and portable material culture last from one generation to the next and this renders them the medium through which habits are calculated" (11).

Two remarks are appropriate here. Firstly, the existence of traditional practices and habitus does not mean, of course, that all people within the same 'culture' will behave in the same way. On the contrary, there will be specific norms of conduct for different groups of people, be it hierarchical or based on gender, age or kinship. Nor does it mean that there is consensus about the rules throughout society or that there is an absence of contradiction or conflicts. Secondly, the objectification of social structures can be, but not necessarily is, a powerful brake on change or a basis for legitimizations of their contradictions. The latter is often associated with the concepts of ideology and power, that have received much attention in recent archaeological literature, especially in connection with post-structuralist theories with a neo-marxist base (Shanks & Tilley 1987; Tilley 1982) or a phenomenological base (Barret 1994; Gosden 1994; Tilley 1992). In my opinion, there is too strong a tendency in these—and other—writings to treat both concepts as self-explanatory or even as synonymous with ideas and symbol-systems. Although I am not willing or able to define 'ideology' in general, I do not agree with such interpretations of the ideational framework of cultures and societies. Cultural ideas, norms and values should be—at least analytically—distinguished from ideology and power, although both may be an empirical result. Moreover, the concept of ideology seems to defy any definition for societies other than capitalist, while at the same time this concept is so extreme value-laden in our own society¹¹. Both ideology and power should

be defined for each specific culture, after its own constellation of rules and practices have been defined (Diepeveen-Jansen 1998). The constitution of gender, for example, has consequences for behaviour and action in all societies. It can be manifested in many ways, power and ideology among them, but how, and in which *particular forms and contexts* such transformations take place, must be analyzed for a particular culture in order to understand the impact and meaning of gender creations. In this study the concept of ideology and power will be avoided altogether.

1.3.2 TIME, SPACE, AND CONTEXT IN PRACTICES

The concepts outlined above together explain why communities and societies will always constitute *a specific, unique 'whole', which is nevertheless a systematic whole*. The specificity is formed by the structured and systematic ways in which people define and organize all aspects of their life together: food production, kinship relations, settlements, houses, rituals, the way in which people interpret the actions of each other, or define what is refuse, etc. Because of the centrality of agents in social practices, time and space become even more important aspects of action in this view than they traditionally already are in archaeology. All interaction is 'situated' action in that it takes place in a certain location and at a certain time and is subject to the so-called 'time/space constraints and coupling constraints' (Carlstein 1982). Time is always human time (Gosden 1994). "Time—which is intrinsically unitary and unifying—allows for the coordination of diverse processes" (Gell 1992, 315). The *categorization and organization* of time and space therefore have quite a large impact on that of social relations and constitute an inseparable part of structuration processes (Giddens 1977, chapter 6; Gregory 1982). The consequences of this rather obvious and self-evident statement have often been disregarded in archaeology, when material culture and people are studied as distributions at aggregate time/space levels (Abbink 1984a). In practice, of course, the aggregates are constituted in daily and cyclical routines in an already existing spatial/temporal order (Carlstein 1982; Rapoport 1993). The nearness and frequency of interaction is the basis for cultural similarities and differences. Although our ability as archaeologists to study that level of action is always limited, it should and can be the *analytical* focus. This notion is already enclosed in the archaeological tradition to distinguish different time/space levels of analysis. Each settlement and domestic domain can be regarded as the centre of the 'world' (in time and space) for its inhabitants. At the same time, they are part of an already existing larger cultural framework with its traditional social structures and practices, which have their own spatial/temporal referents, for example on an interlocal or regional scale. It means that there will be recursive relations between the inhabitants of

any settlement and the larger whole to which they adhere. As material culture is always directly involved in this interplay in time and space, it offers great possibilities for analysis and interpretation.

Equally, if not more important is that action is also ‘contextual’ in its meaning; the same type of action or behaviour can have different meanings in different contexts (Hodder 1986). This idea is now commonly accepted, although it remains one of the largest problems in archaeological research. The specific context and especially its meaning have to be inferred from spatial-material remains, no matter what the theoretical viewpoint is. Even though theoretically it can be argued that the archaeological context of material culture will be connected with the original context of meaning and interpretation, the question *how* they are related remains difficult to answer. Perhaps because of the growing awareness of the hermeneutical/ontological problems, the emphasis has lately shifted to the phenomenological side of structuration or even to phenomenology outright (as in Tilley 1994).

1.3.3 MATERIAL CULTURE

The views on material culture follow logically and directly from the foregoing framework. All—material—production is, just like all other aspects of culture, the transformation of structuring principles and categories into a material and empirical reality. Material culture is an integral and meaningful part of all practices and systems of a society. Material objects are produced and used in actual life for specific purposes and carry specific meanings within these societies and/or in specific contexts (Hodder 1982a, 1987). This transformation will also always be carried out in a specific and systematic manner, for several reasons. First of all, because the material world, including ‘nature’, is categorized and transformed into *cultural resources*, as Ingold made succinctly clear as early as 1981. The definitions of, for example, raw materials and foodstuffs include a choice between alternatives, as well as the definitions of what is ‘needed’: the definitions of the functions of artefacts. Secondly, the technological know-how in a society will determine how these products are to be made. I agree with Ingold (1991) and Lemonnier (1986) that technology itself is a social construct, meaning that it can never be seen as an independent or determining factor. This is true even for today’s industrialized societies¹². Of equal, if not more, importance than the tools and skills are the normative definitions for this production, of what a product should look like. These prescriptions can vary from very vague and fuzzy to very specific and uniform for any artefact or group of artefacts (Van der Leeuw 1984, 1991). Material production *is* cultural production in at least three fundamental senses:

1 Any object is a transformation of raw materials into an object with a specific use-purpose and use-value. It therefore

embodies any and all ideas about that object, ranging from the definition of use, the choice of raw materials, its shape and size to the definition of its meaning.

- 2 The need for and choice of these objects, and the ideas about them are defined by the society’s agents through social, cultural, and economic practices as well as by the available technology and resources. Again there is a recursiveness between all of these aspects.
- 3 Material objects fulfil different functions and have different meanings in different contexts. As an integral part of the structuration process, material objects can in turn influence the existing practices and relationships between people; for example, through the formation of symbolic capital, but they also can directly influence social-spatial behaviour (Rapoport 1993). In short, material culture is also *material practice*.

Much work has already been done on the involvement of artefacts in (re-)shaping social relations. Put within the framework of structuration theory, it is possible as well as necessary to study material culture and its contexts as a systematic transformation of the same structuring principles that create cultural norms and values. In other words, material culture can fruitfully be viewed as *the material form of categorization and ordering*; it is as such also a taxonomic system, a structured set of similarities and differences (Hodder 1986, 124-130). Material practices are of course closely connected with space and time, because artefacts, including the built environment, are made and used within different scales in the cultural framework, from local to regional and short to long term use of materials and style. As Gosden puts it: “we are socialized into various material settings” (1994, 11). The wider framework of shared values will lead to shared characteristics in material culture at that level, while at a smaller scale variations within these general features may be expected. Material culture will therefore show similarities and differences at the local and regional level. Such “structural variants of the habitus” (Bourdieu 1977, 86) are important not only for the analysis of stylistic traditions, but also for those in technology and use of material objects. A logical consequence is that variations in material culture may have different meanings at different time/space levels (Gosden 1994; Gregory 1982).

The above views also form the basis for the approach used in this study and are further specified in section 1.4.2 and 5.

1.4 Structuration theory and archaeological research

1.4.1 DISCUSSION

A commonly expressed criticism is that a structural or contextual point of view is obsessed with ideology and symbols, with ideas in people’s head which, however important, cannot be

studied in archaeology. The second is that this approach has not led to any new results, mainly because it lacks a 'proper' methodology and/or analytic techniques. Thirdly, it has been argued that this approach leads to a complete relativism in science, which can be used either as an excuse for 'anything goes' or as an excuse for a complete halt to scientific research. As the first point has been redressed sufficiently by now, especially by Wylie in many articles, I only want to add the following to that discussion. I agree that it is hardly progress if there is once again a division in archaeological theory between the archaeology of 'symbols and ideology' and the archaeology of 'practical' aspects of life, such as food production and child care. Such a division is, however, in no way inherent to the theory of practice; it would negate, on the contrary, its most valuable part, the recursiveness of all aspects, ideal and material, logic and practice, in social life. The second critique seems more valid at first sight. There is indeed a need to further develop the general theory into a fitting research strategy with methods and techniques which can deal with the data within the theoretical framework. One only has to read Bourdieu to see how this should be done. The specific problems for archaeological research are inherent to archaeology itself—as brilliantly summarized by Binford (1968, 1981)—and are not essentially different from the ones posed by any other approach. The main difference between a 'processual' and a 'post-processual' perspective is that the ontological and hermeneutical problems become more explicit. It is exactly because of the relative and specific nature of societies, *both in the past and in the present*, that with a structuration perspective the focus shifts to the *internal logics and the structural whole*. The internal, meaningful interconnections between material, temporal and spatial practices of agents become the subject matter of research, instead of the cross-cultural similarities or differences between specific parts of this whole. Consequently the hermeneutical problems in research methodology become more important, but there is no inherent reason why we can not study the internal logics in past societies in a scientific manner.

The above two points are closely linked with the third one. Indeed, not only reality in the past is socially constituted, but also in the present. Both the past and the present can be interpreted in many ways and in this sense archaeology is always "an act of the present" (Gregory 1982), while scientists are also shaped by their own societal structures and traditions¹³. However, for the very same reasons the past is never completely relative in the sense that 'anything goes'. First of all, because the past can not be bent infinitely to fit any hypothesis (Wylie 1989, 26). Even though the empirical data are present-day constructions, they are finite and determinate and they will always fit some explanations better than others:

"Neither data (experience) nor the theoretical principles governing our appropriation of them are the sole or primary determinants

of what we come to understand about the way the world works" (Wylie 1989, 26) and

"... the strength (of interpretive conclusions) derives from the diversity of their evidential support and, more specifically, from the fact that their constituent strands concern different dimensions of the archaeological record and draw on different ranges of background knowledge.....: *they are compelling taken together* (original emphasis)" (Wylie 1988, 10).

A structuration perspective forces the researcher to do just that, to pay more attention to *all* empirical, material aspects of the past, *i.e.* to a more inclusive focus on the remains. Consequently, excavation methods should be such that all available information, especially the contextual, is retrieved. The growing awareness over the past decades of our own history-in-archaeology and our own specific hermeneutic circles has become most apparent in the turning to phenomenological frameworks for the interpretation of data. As Gosden (1994, 59-60) states:

"... post-structuralism and hermeneutics represent a joint attempt to move from the objective view of the world towards the idea that all truth is contingent... Given such contingency, it is necessary to consider how these views arise out of the cultural matrix and how (they) are used. Hermeneutics and post-structuralism represent a continuing attempt to put science in its place, as one approach to the world among many".

Although reflection on the influence of researchers *as agents* on the outcome of their work is important, if not necessary, it is not the subject or object of archaeology. Moreover, a hermeneutic or phenomenological approach does not discharge the researcher from careful empirical testing, be it in another form than that of general laws. Hodder (1991) synthesized these problems in the following way:

"An integrated but diversified approach (to the past) needs to incorporate three perspectives. (1) The past is objectively organised in contexts which differ from our own. It is in the experience of this objective and independent difference that we can distinguish between competing hypotheses to see which fits best. (2) However, if the present is not simply to be imposed on the past, we need [...] to accommodate our external knowledge (= *our knowledge as agents**) to internal relations (= *the relations in the original context**) [...] to understand the past partly in its own terms by using the criterion of coherence in part-whole relations [...] (3) the third component [...] is the selfreflexive aspect of new ethnographic and archaeological writings." (Hodder 1995, 192-193; *added by the author)

There are, in other words, discursive relations between theory, methodology, and past realities which need to be specified for any actual research.

1.4.2 STRUCTURAL ANALYSIS OF MATERIAL CULTURE

In line with the theoretical views described above, a first and general step towards structural analysis is to approach

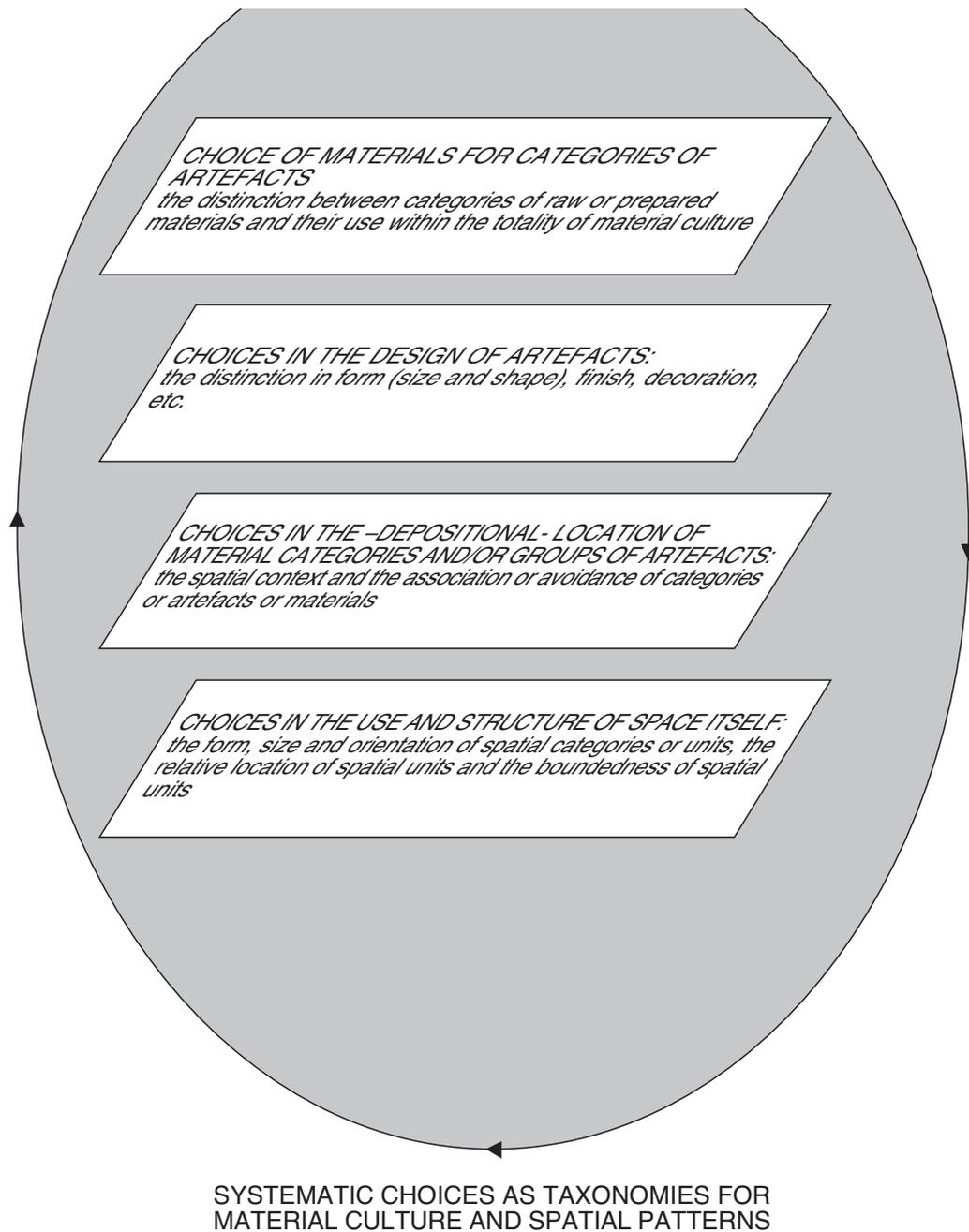


Fig. 1.1 Aspects of material-spatial structuring: Choices and categories in material culture and space.

material culture as a series of interrelated choices, as *the logics of material practices*, starting from the following premises. Firstly, habitual practices, ways of doing things, will be systematically represented in material culture as well as in spatial and temporal patterning. Secondly, material culture is viewed as a structured set of similarities and differences, as a basic classificatory system, created by its producers and users through a series of specific choices. The choices involved in the construction of material culture in any society are choices in material, in construction techniques, in the overall form, including style, of the final product, all in relation to its purpose(s) (Hodder 1989). In the same manner, the specific choices in the use of space and time can be viewed as spatial-temporal taxonomies and systems. When the two are combined in a structural analysis, four series of interrelated choices out of several alternatives can be formulated for material-spatial patterning and behaviour (fig. 1.1).

The four categories of choice in fig. 1.1 should be read as choices against the background of the model for societal structures and practices outlined above and that for pottery. The concept of *choice* refers to the categorizations and classifications made within that society. Each choice represents the constitution of *a meaningful cultural taxonomy* and together they are the basis for the concomitant practices in and of the past. At the same time, the series of choices in the diagram form the basis for *the analytical procedure*, the starting point for the structural analysis of material-spatial culture remains and patterns in archaeology. These two statements mean that a structural analysis aims to establish the *original* ordering and classifications in material culture or spatial patterns and to do so by following as closely as possible the series of interrelated choices that were made in the past.

The first choice in the figure is that between different raw materials for different categories of objects and their purposes, like ceramics for storage instead of leather or wood. This basic distinction and variety in material classification can be analyzed in any archaeological context, although the preservation conditions may cause the loss of important material categories.

The second choice is that concerning the construction techniques, together with that of the specific form, size, shape, decoration etc. for any product in any category. These choices not only represent similarities and differences *within* one material category, but also *between* them. For example, a specific shape or decoration may be used only for pottery or only for metal objects, or only for specific types within these categories. Such associated and categorized differences may provide some understanding of the meanings of the artefacts themselves. Moreover, the production of any artifact also directly involves its function, the use purpose

for which it is made. This purpose will demand specific properties of that product, like the cutting edge of a knife, etc. The maker of a product will apply her or his technical skill and knowledge to make a useful product. Therefore, the production process is basic to the transformation of ideas and matter into an object with a specific use purpose and meaning.

The third choice and category is the context, the type of features in which objects are deposited at some point. Obviously, the practice of 'disposing' of material objects is extremely relevant for archaeology, as it is the basis for our recovery assemblage. Contexts and their classifications can reveal the structured use of space in relation to material categories. Again this is not anything new in itself; the analysis of spatial patterns is a standard procedure in archaeology. However, there is a large and important difference between the analysis of a two-dimensional distribution pattern of one type of artefact and the three- or even four-dimensional analysis of the *relations between distributions* of many categories of artefacts, *linked to categories of contexts*. Only the latter type of analysis will provide the data for the structuring principles behind depositions, again by means of similarities and differences and through *principles of avoidance, association and/or correspondence*. Specific materials and/or artefacts, or some specific characteristic of both may occur regularly or never together in one type of context, or there may be a correspondence between technical or stylistic aspects of artefact types, etc. Many examples are available to illustrate such relations. To mention but a few: the avoidance of ashes and dung in settlements of the Marakwet in Kenya (Moore 1982); the structural association between stone artefacts, especially millstones, ceramic loom weights and spindle whorls in some pits in Oss-Ussen (Schinkel 1994; Kok 1998); the deposition of complete vessels in some features and broken pots in others (in Roman period settlements in the western Netherlands, this study); or the correspondence between pottery, hearths and female domains (Therkorn 1987a).

Fourthly, the spatial form and lay-out are categorical choices in themselves and therefore also represent classificatory systems from the past. The form of features, such as pits, ditches (e.g. square and round grave ditches), houses etc. as well the spatial pattern of these features within a settlement are often very 'traditional' and can therefore be used to our advantage in establishing meanings of spatial categories and their relations with material categories.

The first two levels together represent the basic classifications of materials and artefacts and the technology to make such artefacts. All of these aspects are present in archaeological remains and should be studied at several spatial and temporal levels. The latter two represent the end of the use of an artefact and the beginning of the archaeologically

recoverable assemblage. By combining the four categories in fig. 1.1 in the analyses it is possible to gain some understanding of the structural principles behind the patterns and thereby lay the fundament for a structural interpretation. The value and contribution of the theoretical framework is that it forces us to move beyond separate analyses of groups of artefacts and their distributions, and instead to analyze their interrelationships at all the relevant levels, starting with the domestic domain. It certainly makes structural analysis much more complicated and time-consuming than other types, but much is to be gained by the improved interpretation and understanding that can be its result.

As will be noted, the actual use of the artefacts is only indirectly part of fig. 1.1, although it is of course a central link between production and discard/deposition. The reason is that a distinction is made between the function of an object, like a cooking vessel, and its actual use in daily practice, to be explained below. Fig. 1.1 is first of all expressing a search for the *formal* cultural logics structuring matter and space. The actual use practices of artefacts is a different field of analysis, although of course both fields need to be examined in relation to each other.

1.5 Pottery, society, and culture; outline of the research model

The research model and methodology are derived from the theoretical framework outlined above. Both are defined within the following basic premises.

(a) If the past is to be studied as an integrated whole, the theory and methodology should also be integrated and specifically geared to the research subject. The theoretical framework generates both general and specific views on the involvement of pottery in social practices, which need to be specified for the societies and material culture concerned. The general model for pottery production and use and the major delineation of the research subjects are outlined below (summarized in fig. 1.2 and 1.3), while the further specification of the research hypotheses and methods is presented in chapter 2. A first restriction is that only *ceramic containers*, (vessels) are studied here.

(b) Pottery should be studied as part of a series of interrelated practices, from both the potter's and user's point of view. Following the choices outlined above, ceramic containers are a material category that is produced and used for a variety of purposes. As such it represents two different, but related fields of practices: the making and the actual use(s) of vessels (fig. 1.3, left and right). The most important link between these two practices is formed by the definitions of the specific purposes pottery was to be used for, for example for cooking. The formal or intended use purposes of ceramic containers are defined and classified in relation to other materials as well as to social, economic and cultural

demands (fig. 1.3, top and bottom). The formal use definitions are usually referred to as the *functions* in the literature (e.g., Skibo 1992, 33). The term 'function' will also be used in this study. Hopefully it is clear, that it is *not* used in the sense of usefulness or effect, but as an expression for the way any object is supposed to be used, a reference to its position within the overall taxonomy for material culture as well as to the distinctions made within the category of ceramic vessels (see c). The term also refers to the possible difference with the *actual use* of a vessel; for example, a vessel designated for cooking may have been used as a storage vessel in actual practice.

(c) Within the overall categorizations of material culture, the category pottery will have its own internal classification, the distinction in the type and number of different functions to be fulfilled by ceramic containers. This distinction is called the *degree of functional differentiation*. The definitions of different functions also will be the basis for the actual ceramic *inventory*. One of the main problems in defining functions and functional differentiation for prehistoric pottery is the fact that direct evidence is rarely available. When no written or iconographic sources are available, functional categories can be established only indirectly. In terms of the theoretical framework, there will be a recursive relation between 'the theory of classification' and the 'practice of use' of pottery, meaning that the formal use will be based on the actual use experiences within a community or society and vice versa.

(d) In general, archaeological assemblages consist mostly of sherds of vessels that were broken in the past, but complete vessels are also found regularly. The importance of depositional practices for interpreting the meaning of the context and the pottery involved, was already discussed above (1.4.2). Together, the three steps or practices, production, use, and deposition, constitute the '*life-cycle*' of pottery, or rather of any individual vessel. The distinction is important because it means that the individual vessel, in all its aspects, is the basic unit of observation. Each of the three practices will have its own rules within a culture, while there will be specific and recursive relations between them. The ways in which the vessels were made, used, and disposed of, but especially the interconnections between them are therefore the focus of this study. General aspects of these relations, mostly concerning the production, function and use, are explored below, while in chapter 2 they are translated into actual research variables and methods.

1.5.1 THE CYCLES OF POTTERY

The main aspects and relationships involved in the life-cycle of vessels are summarized in fig. 1.2-3, see also fig. 2.1. The making of a ceramic vessel is the beginning of its cycle and the most direct link to its function in two ways: through

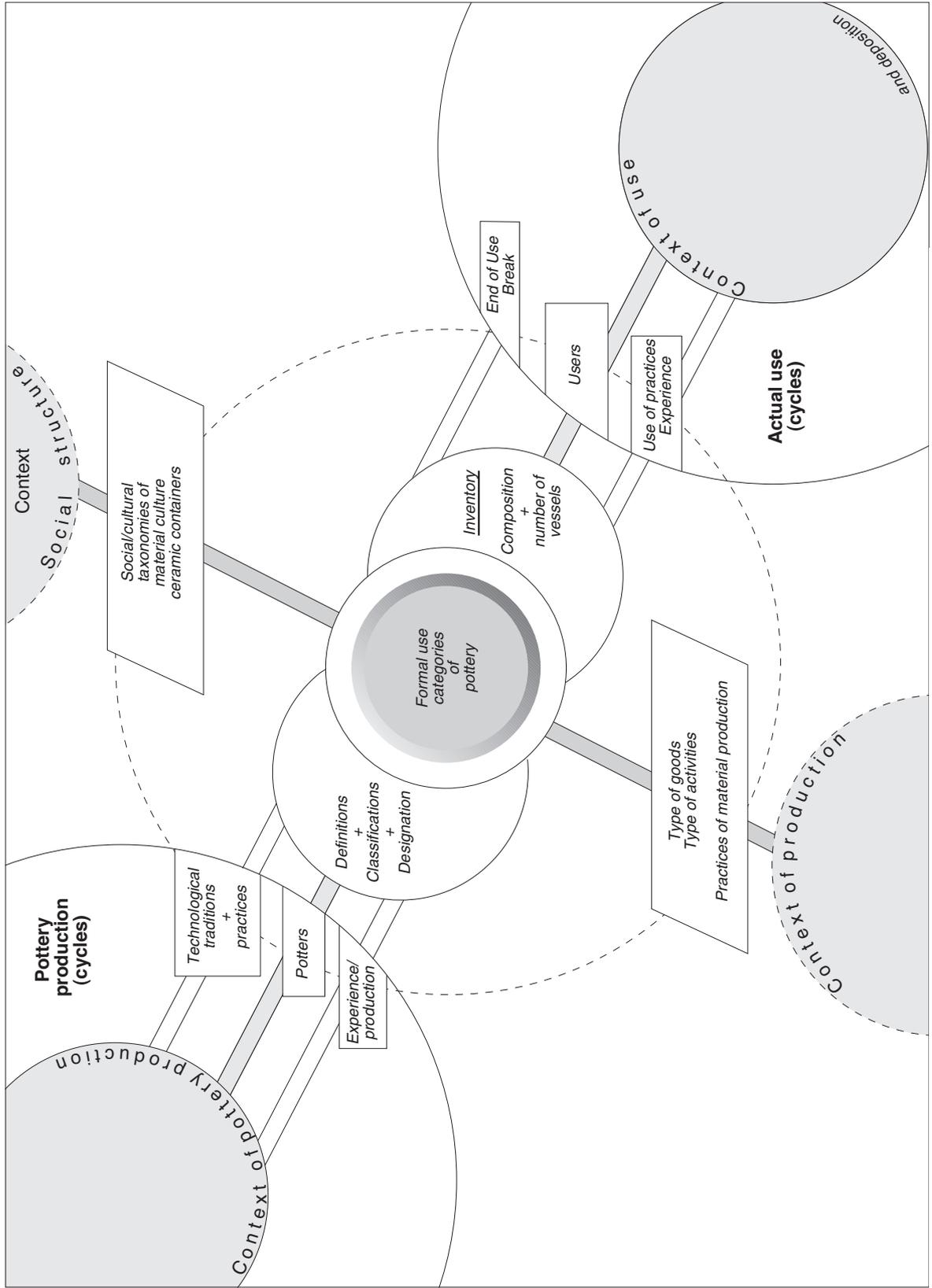


Fig. 1.2 The structural and contextual basis for the production, function, and use of a ceramic inventory.

the construction techniques and through the form of a vessel. To begin with, the potter will start to make a specific vessel, one out of the basic inventory. To make this vessel necessarily includes ideas on (a) what a vessel is supposed to be

used for, what qualities and properties it should have and (b) what it should look like. These ideas and their relationships are transformed during the production process itself into vessels with specific characteristics: the function of a vessel

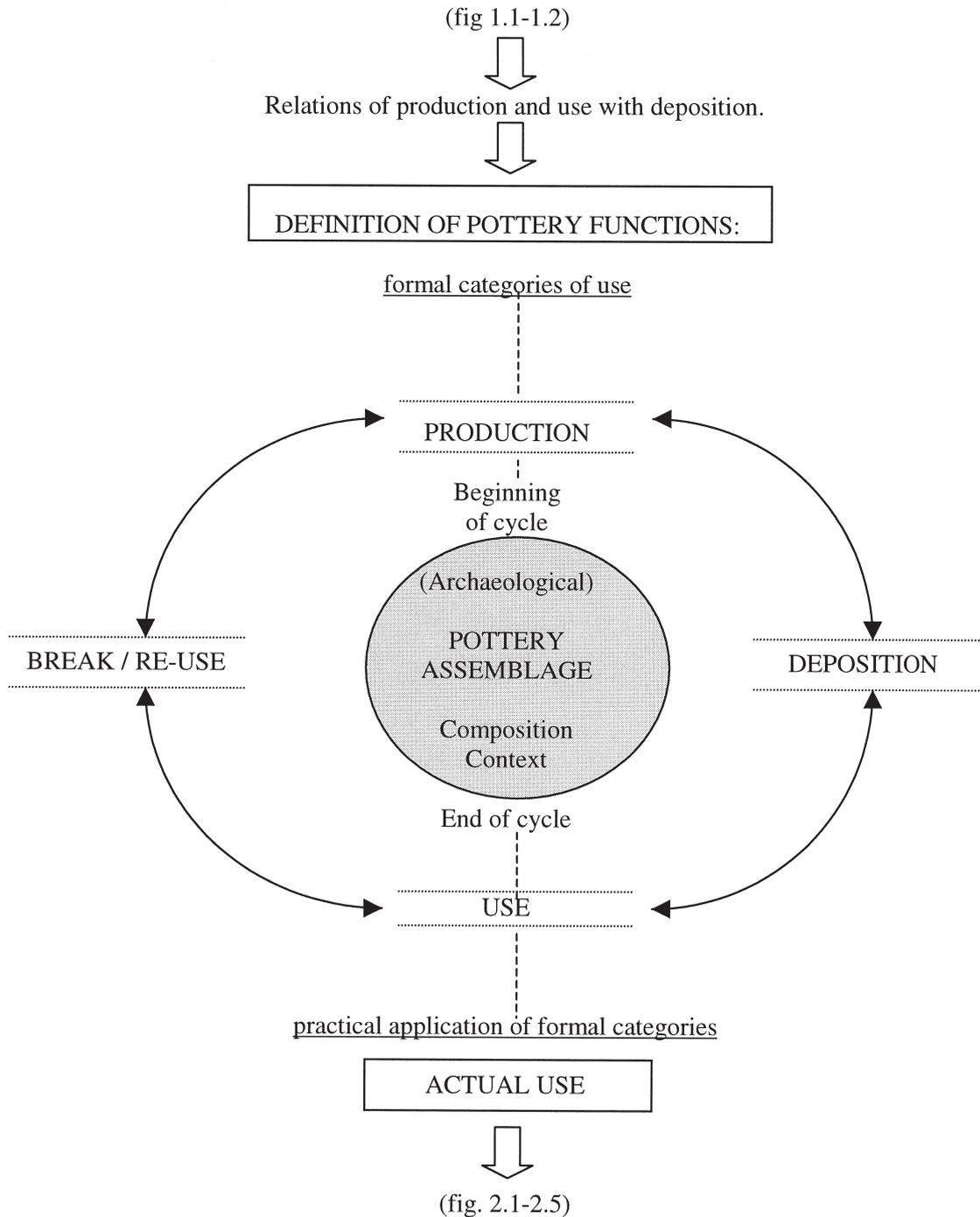


Fig. 1.3 The cycles of pottery production, use, and deposition.

is given 'form' in the construction process, articulated into recognizable and recognized characteristics, including aspects of style. Both the potter and the user will know what this particular type of vessel represents.

Secondly, the technology will be connected with the function through the choices of raw materials and manufacturing techniques. Both choices will be made within the available knowledge of how to make a product with specific properties, considered to be suitable for a specific function (the left hand side of fig. 1.2); a cooking pot for example may require a different fabric than a storage vessel. The manufacturing will also be directly geared to the actual use (right hand side), if only through the necessary replacements of broken vessels for example.

At some level, the actual use will be identical with the function (the centre of fig. 1.2). The classes of pottery, defined and recognized by a group of people, will have referred to their practical meaning and actual uses. Both the use practices and the functional definitions are directly related to the social and economic contexts (top and bottom of fig. 1.2) through the systems of productions and the type of goods and activities for which ceramics are used. Differences between the designated and actual use can have many reasons. One factor may be the degree of functional differentiation itself (see above). It can be argued that the more circumscribed the function of a vessel is, the more likely it is actually used for that purpose only. In our own society the functional distinction in glass containers is for example very high; each type of drink has its own type of glass (at least formally). Another example, more in line with the present subject, is the differentiation in types of cooking- and frying pans. In these examples, the differentiation is always expressed in the form of a glass or pan.

Whatever the actual use(s) are, a specific vessel will at some point in time have to be replaced, usually because it has broken. Then the life-cycle of another vessel is started, while the remains of the previous vessel are disposed of (fig. 1.3). The depositional practices, especially the contexts and the composition of the deposited sherds, are an important link between use and production (or vice versa) in two ways. Firstly, in every culture there will be rules and practices for dealing with broken material, including the definition of what is considered refuse. These rules and the concomitant practices may be reflected in the patterns of deposition. An important question is how these rules have affected the—composition of—recovered assemblages, for example because of special deposition in a ritual context (as is the case in Schagen-Muggenburg). Such practices obviously are of interest in their own right, as the combinations of pottery types and contexts can provide important information on the rules behind both. Secondly, the deposition of sherds or vessels not only mark the end of use, but it is at the same

time the basis for the 'death assemblages' to be recovered by archaeologists (DeBoer 1984). Hypothetically, the category of *vessels* that were used most frequently, will also break more often and thus form a higher percentage of the *sherd* assemblage. The contexts together with the composition of an assemblage thus indirectly provides information about the type of use and the break-frequencies of different types of pottery. This aspect is discussed in more detail in the next chapter.

In sum, neither the technology and functions, nor the form and style of pottery can be fully understood when each is studied in isolation; nor can they be separated from the structures and practices of the society of which they are part. The production practices are essential for the *analyses* of pottery characteristics, especially their variations, as features of the original taxonomies of function, while the practices of use and deposition are crucial to *understanding* these properties within the social structures concerned. This study starts from the assumption that the form, *the size and shape*, of a vessel does indeed refer to or contains information about its function. In chapter 2, evidence for such a connection is presented.

1.5.2 RESEARCH QUESTIONS

The central questions to which this study aims to provide some answers were summarized at the start of this chapter. Here, they are specified into a series of more specific interrelated questions, which also represent a first delineation of the rather large subject matter. The main research is focused on the relationships between technology, function and use:

- 1 Which traditions can be distinguished in the manufacturing techniques of the pottery from this period and region.
- 2 In what way or ways are these techniques related to the morphology of this pottery (both the form itself and the qualitative features of a vessel).
- 3 Which formal categories of use (functions) were defined for pottery. Which characteristics or combinations thereof can be distinguished in any vessel that point to its designated function.
- 4 (How) are the technological traditions influenced by the formal use categories and/or by the uses to which vessels were put in actual practice.
- 5 Which methods are most appropriate for this type of investigation.
- 6 For Schagen: What is the relation between the ritual depositions and the—types of—pottery involved in these practices.

Depositional patterns will be studied only in a limited form. For the settlement at Schagen, a first attempt is made to establish the rules behind the involvement of pottery in ritual practices. For the site of Uitgeest, a limited analysis of

assemblage composition is carried out to infer some data on break-frequencies, which are also used as a support for the interpretation of function.

1.5.3 METHODOLOGY

The methodology and the development of suitable methods and techniques have to be an important aspect of this research. Most important is the correspondence between theoretical and analytical classifications and processes, outlined in section 1.4.2. The theoretical approach to material culture: production, function and use at the same time constitutes the basis for the analytic procedure of material culture. By 'following' the life-cycle of each vessel, the process of making a vessel, including the characteristics of its end result, and those of its actual use become the basic analytical categories. Through this process it should be possible (a) to infer relevant variations in the ceramic inventories and establish at least some of the original classifications for that part of the material culture in the past, (b) to establish the associations between the analytical categories, and through this (c) the relationships between the different practices.

This approach poses methodological problems. As it is unknown which dimensions of variation were meaningful in the original context, the choice of variables, especially their *dimensions* and the level of precision of observations can not be chosen a priori. Both will have to be geared to and based on the specific material culture, while at the same time the aim is to establish such dimensions. Any a priori choice of dimensions will exclude other possibilities and will to some extent determine the result of the analysis. This hermeneutical problem is evidently not in itself typical for a post-structuralist approach, but it is highlighted by it and confounded by the nature of the subject of archaeology. An example may clarify this. If, as in this study, the aim is to establish the relations between ceramic technology, vessel forms and their possible functions, the relevant dimensions of variation in all three fields have to be established, as well as for their combinations. For each there are numerous variables and levels of detail which can be measured. But only those ones that were recognized and used in specific combinations and in a systematic way by the original users and producers, are relevant in the end. Such variables and dimensions can only be inferred from the material itself as there are no independent criteria outside of the material to establish these. Ideally, it should be possible to determine meaningful variations within and between ceramic assemblages *through the process of the analysis* itself¹⁴. Fundamental to this methodology is the continuous, dialectical relationship between theory, methods and data throughout a research project. Every choice of variables, dimensions and classifications needs to be made explicit in each step, while

at the same time any categorization or classification by the archaeologist should be open to change. This cyclical research process is, in my view, the essence of the translation of theory into practice within the double hermeneutics as outlined above. However, in actual practice one clearly can never include all possible—levels of—variation and if an enormous overload of analyses are to be avoided, some a priori choices must be made. They can and should be based on a theoretical model together with available data from previous research.

Some a priori choices:

The following a priori assumptions were made to narrow down the otherwise impossibly large scope of the research. The first and general delineations are represented by the grey areas in fig. 1.2, the nature of the social and economic structures, see below. The specification of the variables and methods for the analysis of the pottery itself, and to a lesser extent for depositional practices, are the subject of chapter 2. The formulation of some assumptions and hypotheses and the choice of variables which are most appropriate for this study (par. 2.5-6), is based on reviewing relevant literature (par. 2.2-2.4).

Firstly, the model is geared to analysis at the settlement level and the domestic domain. The household, however defined and composed, is assumed to be the basic unit in which pottery is used. A household will be the group of people living under one roof. Most settlements in the period and region concerned still consisted of only one or a few 'roofs' (farmsteads). It is likely, and assumed here, that pottery making was also still taking place at the settlement level, if not household level and that the potters were women¹⁵. The relevance of distinguishing gender-related production and use is the relation with the role and significance of the potter *and her products* within a community, as documented, for example, by Welbourn 1982 and by David & David-Hennig 1971.

Secondly, questions about the larger socio-cultural framework and context of these households fall outside the scope of the analysis. The available information and interpretations are used to formulate some a priori assumptions about this larger framework and the economic system for this study¹⁶.

- Material production and use, including food production and consumption, took place at the domestic and/or settlement level. In the mixed agrarian economy, the most important animals were cow, sheep/goat, pig, and horse respectively; the most important agricultural products were cereals (barley, emmerwheat, beans, linseed, and camelina).
- There is no extensive social hierarchy between families or settlements and there are no major differences in the composition of households.

- The inhabitants of both sites share a cultural framework at the regional level. This ‘West-Frisian’ culture also shows some affinities with the culture in the northern coastal region (the ‘Frisian’ culture) and to the South (province of South-Holland). The regional-cultural framework is visible in many aspects of the material culture and spatial structures from at least the beginning of the first century AD through to the third or fourth century AD (see Taayke 1996/97; Woltering 1996/97). Variations in the regional style will therefore be defined at the settlement level or even by the individual potters.

If these presuppositions are correct, then the three practices will be closely connected at the settlement level. The potter is probably also the main user of her products, while the functions of pottery will also largely be the same within each household.

1.5.4 THE STRUCTURE OF THE CONTENT

The structure of this book is hierarchical, as a direct outcome of the research model and strategy. The empirical investigations start with the independent analyses of several groups of variables for fabrics (chapter 4-6) and for morphology and use of pottery (chapter 8) from Uitgeest and Schagen¹⁷. Each partial analysis is first summarized throughout chapters 4-6 and 8. At the end of each chapter the partial analyses are jointly interpreted and summarized. The larger blocks are combined in two separate chapters, chapter 7 for the fabric analyses and chapter 9 for the relation between fabrics, form, and function. Although for most of the analyses several methods were developed and tried out, only the final choice of methods is presented.

The dialectical process of integration and interpretation of partial analyses led in several instances to the *reclassification of variables* in chapter 8 and 9. The changes may sometimes confuse the reader, but by doing so, the strength of the interpretations was increased and a growing understanding of the significance of pottery in the two settlements was achieved. Another consequence of this strategy is that some repetition of information in the summaries and conclusions is unavoidable.

notes

1 A related strand of stylistic research, not further discussed here, is the structuralist analysis of decoration patterns on pottery, usually aimed at establishing the meaning of such patterns in relation to social or family units and their relations. An excellent example is the study of Van der Velde 1979.

2 See appendix 2.1 for references.

3 *e.g.*, Darvill & Timby 1982; Freestone 1982; Heimann 1988; Middleton *et al* 1985, van der Plas 1990; Stoltman 1991.

4 The few studies that deal with this problem seem to indicate that the influence of the location of the sample within the vessel wall is negligible (for example Magetti & Kahr 1981, Stein *et al* 1991), but see chapter 5 for different results.

5 For example, Bloemers’ main criterium is the shape of the rim, combined with overall shape and to some extent also with size. Taayke’s main criterium for classification is ‘decorated’ versus ‘undecorated’ rims and within these classes, the presence of handles, then the size of the maximum diameter and the rim diameter. The main criteria used by Van Es are the shape of the rim and the ‘shoulders’.

6 Unlike the *terps* in the coastal zone of Friesland and Groningen which are usually made up of sods and all types of occupation debris. The interesting fact is, however, that ‘raising’ was such a common activity for a while in all of these regions, although there are substantial differences in height.

7 Giddens (1979, 82, *passim*) used the concepts of signification, legitimation and domination to express three aspects of all actions.

8 Bourdieu (1977, *passim*) distinguishes several types of practices by their nature and frequency, such as ‘daily/ routine’ practices, cosmogonic practices etc. Others (like Shanks & Tilley 1987) distinguish by the type of activity, such as economic, social, ideological practices. Such classifications can, depending on the type of society, be analytically useful, but in essence all of these are interconnected into a specific social order.

9 Giddens formally defines structuration as ‘the conditions governing the continuity of transformation of structures and therefore the reproduction of systems’ (1979, 66), but I prefer the way he actually is using this concept, as an ongoing process (in the duality of action, structure and praxis).

10 Routinisation is used in the original spelling.

11 Giddens (1979, chapter 4,5) argues that contradictions in the social rules are the basis for the constitution of power and *an* ideology. The view is based on a new interpretation of old marxist principles. The concept of contradiction is very useful indeed, but the relation with power, and certainly with ideology, in my opinion still very much represents a western-historical view that cannot be applied to pre-and protohistoric societies.

12 The choice to develop nuclear technology before and instead of developing techniques for other energy sources as sun and wind is an example. Surely the former is much more ‘complex’ than the latter, which was part of the technological tradition for a long time in the Netherlands, but had to be re-invented.

13 This no doubt is one of the reasons for the preoccupation with power in present academic practice.

14 The analysis of the occupation features in Schagen-Muggenburg by Therkorn (forthcoming), discussed in chapter 3 and 8, is an excellent example of a structural approach and a dialectical method of analysis. The pottery from this site can thus form an important contribution to a contextual analysis of both practical and symbolic use of pottery.

15 This assumption can be defended on ethnological grounds.

16 Mainly Bloemers (ed.) 1988; Brandt *et al.* 1985, 1987; Therkorn & Abbink 1987; Therkorn forthcoming; Woltering 1996/7.

17 The system of description was made in cooperation with Spruyt, and was based on the analyses of the pottery from the Assendelver Polder excavations.