

Attila Kreiter
Department of Archaeology
University of Southampton
Highfield
Southampton
SO17 1BJ
United Kingdom

Title of the thesis:

Analysis of Middle Bronze Age Ceramics from a Tell Settlement in Northern Hungary:
Ceramic Technology and Social Identity

Aims:

The aim of this thesis is to investigate technological tradition and changes of the Early and Middle Bronze Age ceramic technology at the tell settlement of Százhalombatta, Northern Hungary. The Bronze Age of Százhalombatta has been characterized largely by two ceramic traditions that are the Nagyrév and Vátya periods. These periods are considered to be two of the most important and influential during the Early and Middle Bronze Age in the Carpathian Basin (Bóna 1992). By using ceramic petrology, it is aimed to gain a better insight into the nature of these two ceramic practices, and consequently of the society that created them.

The material culture of the Nagyrév and Vátya periods have been understood through formal changes (Bóna 1975) but Bronze Age ceramic technology has never been a focus of systematic analysis. While much very useful work has been written (Kovács 1969; Bóna 1975; Kovács 1975; Bóna 1992; Poroszlai 1996; Poroszlai 2000), it does not provide a satisfactory explanation for the morphological and technological change and tradition between the two ceramic practices. In this thesis a different attempt is made to explain change and continuity in Bronze Age ceramic technology. In order to reconceptualise the change and continuity between the Nagyrév and Vátya periods this study will focus on the social nature of ceramic technology.

How this research relates builds on and challenges previous work in the field:

In pottery studies stylistic research is usually limited to decoration and morphology since it has been argued that technology is strongly limited, as a result of functional and environmental constraints, that offer little space for the potter for stylistic expression (Arnold 1997; Barnett & Hoopes 1995). As opposed to this view in this thesis the ceramic technology of the Nagyrév and Vátya periods are considered as essentially social, not technical. Moreover, any technology should be seen as a political, social and symbolic system (Pfaffenberger 1988; Lemonnier 1989; Pfaffenberger 1992; Ingold 2000) and within the social system behaviours are related with the material world and not directed by evolutionary mechanism (Shanks & Tilley 1987; Dobres 2000; Barrett 2000)

In Hungarian archaeological tradition most pottery studies are based on morphology and decoration (Bándi 1960; Kovács 1963, 1969; Bándi & Kovács 1974; Kovács 1974; Bóna 1975; Kovács 1975, 1978). Ceramic vessels are often regarded as chronological indices or

cultural identification symbolising the ethnic affiliation of their owners. Major stylistic variations are interpreted implicitly or explicitly as the material manifestation of a new 'culture' or 'group', whilst minor adjustments in shape and decoration are seen as representing a later phase within a culture zone. The Hungarian archaeological tradition has been concerned with identifying and interpreting similarities and differences, homogeneity and heterogeneity among the artefacts. These similarities and differences result in the definition of types, which are used to construct chronologies (Bóna 1975). The underlying problem with this approach is that is not explained why stylistic differences occur. Thus, the material culture of the Nagyrév and Vátya periods have been understood through formal changes but Bronze Age ceramic technology has never been a focus of systematic analysis.

In this thesis, technological tradition and change are being investigated through social dynamics since ceramic technology cannot be understood without relating them to their social milieu and studied as a component of a complex cultural tradition (Hodder 1982). Material culture cannot be regarded as a passive reflection of activities governed by strict rules (Jones 1997: 15-39), but is active in the process of social production, re-production and transformation (Conkey 1990; Shanks & Tilley 1996; Hodder 1982; Miller 1985).

It can be considered that style, as part of ceramic technology, is a means of communication, which can be used to express both social and group identity. In this thesis, the investigation of style is not restricted to formal properties of ceramic design and morphology but is explored at different levels. It is considered that potting technology may well convey as significant information about identity as the object itself.

In this thesis, ceramic technology is considered as part of style and it is viewed as a purposeful phenomenon, which is not opposed to function and as such it cannot be separated from technology and production. This technological style can be present in every stage of a production process. It is argued that ceramic technology was one of the arenas to construct a physically marked and arranged social environment in which people defined social relationships through their technology. The variety of vessels within the same category (e.g. storage vessels) suggest that efforts to define communal identity were a major component of material life during the Nagyrév and Vátya periods. It is considered that technological style was part of a characteristic system through which people transformed and displayed identities, since material culture actively forms differences in identity. It is also considered, that towards the end of the Middle Bronze Age people articulated particular identities established in a particular social context within a particular time period, which constituted in the coordination of pottery industry. The representation of identity therefore resides in all aspects of artefact variability even within those circumstances which appear to be explicitly functional (Sackett 1986).

It has been suggested (Sackett 1985) that technology can play a role in binding people together who practice their skills in a similar way and this behaviour can be seen as forming a notion of belonging together by providing stability and predictability in skills, and effectiveness in human relations and technology. On the other hand, with relation to social identity, technology can be actively used in the disruption, alteration and creation of social relationships (Sofaer Derevenski & Sørensen 2002; Pfaffenberger 1988).

In the traditional view of style it is argued that decoration and morphology as part of style could be a distinctive characteristic, which makes it unique to a specific time period and group of people (Sackett 1990). In this thesis, it is considered that not only the morphological and decorative styles but the technology itself, which leads to that product can be characteristic and exclusive to a particular period and group of people. The choices artisans made are dictated by the technological tradition of their group which characterise their belonging together and their differentiation from the 'significant' others. These choices are considered time and space specific and consistently expressed within a given group at a given

time. For this reason, ceramic technology can be viewed as a medium of conveying social and group identities. In this process, identity is considered as an active practice since the sameness must be established it is not given (Jenkins 2000). Social and cultural identity can be expressed in many ways but it has been recognised that the articulation of identities are culturally and historically determined (Wetherell 1982).

In this thesis, it is aimed to explore how and to what degree is technological style intentionally created and manipulated by artisans to achieve the end product. In contrast to Wobst's (1977) hypothesis, it is argued that identity can be represented not only on the external level of technology, which is the most visible for the outsiders, but on the internal level as well, which is less visible and the two levels cannot be dissociated not only from each other but from other aspects of society such as social relationships (Hodder 1982).

Theoretical and methodological approaches to be adopted:

Traditional pottery studies consider technology to be strongly limited as result of functional and environmental restrictions (Rice 1987). As a result stylistic research is usually restricted to decoration and formal variations since the functional and environmental restrictions offer little space for the artisans for stylistic expression (Hantman & Plog 1982; Plog 1983; Braun 1985; DeBoer 1991). In this thesis, the research of style is not restricted to formal properties of ceramic design in which material culture is conventionally defined but it explored at a different level. It is considered that not only objects convey social information but the processes lead to that object can convey considerable information about identities as well. In order to explore the social embeddedness and symbolic aspects of ceramic technology this thesis does not try to understand material culture only through formal changes but tries to explore Early and Middle Bronze Age ceramic technology through social processes.

The ceramic assemblage became more varied by the end of the Middle Bronze Age. In order to consider the possible reasons for changes or similarities in ceramic technology and clay manipulation it is necessary to take into account why certain clay types and minerals were used. Ceramic petrology can provide a means of establishing the origin of the material used, the technology involved, comparability with similar material with known origin and identify local and imported pottery. Consequently, ceramic petrology may provide means of recognising information on movement of pottery, and contacts between various communities.

By using ceramic petrology, this thesis aims to identify what technological style means at Százhalombatta in the Early and Middle Bronze Age. Ceramic petrology provides the means of exploring regularities in clay and temper manipulation and the technology involved. These manipulations include the type of clay used, the amount and size of different tempering materials added to the clay and the building technique. The consistencies in the manipulation of these practices help us to define the technological style. The recognition of similar or distinctive technological traits is essential since the choice and preparation of materials used for pottery reflect the tradition and culture very strongly. Having identified the technological style of each period, it is aimed to reevaluate the relationship between the two periods and argue that changes may have been brought about by rearrangements in social relationships.

In this thesis, it is considered that sequences of ceramic technology are used to express cultural identity. Ethnographical example shows (Barley 1984), that certain technological practices could mean the regeneration of the vessel. In this, thesis it is argued that embodying one vessel into an other one could imply not only the renewal of the vessel but it also shows respect for the ancestors. This practice can be considered to maintain group identity and reinforce social relationships. The regeneration of the vessel implies uniformity in behaviour, stability and maintaining tradition. It can be considered that ceramic technology as a way of communication and exchanges between living and ancestors strengthen the community's

notion of belonging together. The regularity within the ceramic technology suggests that the potters were consciously participating cultural identity through their ceramic production.

It can also be considered that the social system may have confirmed and maintained its heritage through ceramic technology. These practices reinforce the notions of cultural memory. In this thesis, it is argued that cultural memory is maintained through ceramic technology because ceramic vessels as part of ceramic technology are relatively not as perishable as other objects and they may have been used to mark the boundaries of different groups. The act of remembering is integrated within everyday social practices and embodied through ceramic technology. This distinctive social practice brings together the notions of time and technology in given time. Remembering the past may have been a crucial part of respecting the potting tradition carried out by Bronze Age potters. Within the society, self is not just a being but the memory, knowledge, experience of the society are deposited in the people, which make them a repository of cultural resources. The notion of time is also considered to be an important aspect in the process of identification because of the community's past. Remembering the past, following the tradition, are both socially constructed and accepted. Social stability and continuity requires the conceptualisation of a meaningful past. Remembering the past plays an important source upon which to draw in making meaningful the here and now and predict the future (Jenkins 2000). This notion further underpins the necessity of remembering.

Moreover, it can be considered that the representation of collective identities has been institutionalised. Institutions give order to society and recognised and accepted by agents. This behaviour standardises the cultural system by providing similarity and efficiency. If this behaviour is standardised it produces a structured material environment that serves to affect and control the society itself. The regularities in ceramic technology suggest that efforts to define communal identity were a major component of material life. Ceramic technology represents a characteristic system through which people transformed and displayed identities.

By using Bourdieu's (1990) concept of *habitus* it is aimed to draw attention to and offer some explanation for, certain regularities within Bronze Age pottery. Considering the regularities in clay and temper manipulation and the technology involved, it is argued that these characteristics could have been manipulated by the potters to produce a vessel, which would be acceptable to the society as part of the *habitus* of that society. The manufacture of socially acceptable vessels is concurrently the production of utilitarian artefacts and the production of these artefacts conform to the norms and values which constitute the *habitus* of that society. In practicing ceramic technology, potters react to the prevalent *habitus* not necessarily in conformity with it but respect to it. As ethnographical example shows this behaviour makes ceramic technology a medium for structuring society (Hodder 1982).

Material and data available for this study:

To achieve the goals of this study a meticulous approach towards ceramic collection from Százhalombatta is necessary. However, in order to make this research programme a feasible three year project a representative amount of ceramic material will be analysed. Almost six hundred sherds were selected, which represent a wide diversity of physical characteristics were chosen for analysis. From this sample a selection is chosen for petrographic analysis. The material was excavated between 1989-1992. The archaeological material was imported to the Department of Archaeology, University of Southampton in October 2002 and the material is licensed to remain in the Department of Archaeology until December 2005.

Two types of storage vessels were chosen for the analyses; urns and squashed shape vessels. These two types of vessels exhibit a wide variety in terms of their size and shape through the Early and Middle Bronze Age. Storage vessels are constant features of sites in the Bronze Age, which makes us able to pursue further research in comparing technological

similarities and differences among contemporary Bronze Age sites. These vessels are petrologically heterogeneous which allow us to look change and continuity. By using ceramic petrology it is aimed to explore the similarities and differences in the ceramic technology of the two periods. The recognition of similar or distinctive technological traits is essential since the choice and preparation of materials used for pottery reflect the tradition and culture very strongly and changes in identity could be reflected in ceramic technology. Százhalombatta is a multi-layered tell settlement and the selected material represents the whole chronological sequence of the settlement, which allows the detailed exploration of the two ceramic practices.

It is aimed to compare the results with other contemporary sites in order to explore what technological identity at Százhalombatta means. It is aimed to examine whether technological identity is representative for a particular settlement, a particular group of people or a particular period. Museum collections in Hungary will be visited to examine Early and Middle Bronze Age ceramic assemblages and petrological analysis will be arranged to gain comparable picture of Bronze Age ceramic technology from other sites. Knowing the dimensions of technological identity on different Bronze Age sites is essential to understand the construction of a physically marked and arranged environment in which people defined social relationships through their technology. Through the different levels of technological representations people signalled particular identities grounded in particular places, which were subjected to reproduction and transformation.

Preliminary Results

So far more than four hundred sherds have been analysed under light microscope and a representative amount of sherds have been thin sectioned. At this stage of the research, fabric groups are being established by considering the primary inclusions in the clay matrix. In general, most of the sherds from Százhalombatta are of a hard, compact fabric.

Ceramic petrology provides the means of identifying regularities in ceramic technology. It is argued that the consistencies in ceramic technology constitute technological style. In general the distribution of the minerals are very even and very fine sandy clay was used for potting through the Nagyrév and Vátya periods. This implies that the clay used for potting was either very clean or went through a very thorough cleaning process. In most of the cases grog is the only temper added as tempering material.

The pottery fabrics were identified macroscopically in order to identify and measure the basic mineral components of the sherds. The two most common minerals of the clay are quartz and mica. The amount of the quartz minerals in the clay matrix in most of the cases is 40%, and the size of the minerals are usually 0.1 mm in size or smaller. The amount of mica varies from 2% to 30%, and the size of the minerals is 0.1 – 0.2 mm. Both quartz and mica seem to be naturally present in the clay. As a result these minerals are not considered to constitute technological style. In most of the cases grog is the only temper added to the clay. Tempering is frequently treated as functional and to enhance the properties of the vessel a considerable amount of it (20-50%) is necessary (Rye 1981: 39). The samples from Százhalombatta indicate that only a little amount of grog (1-7%) was used which is not enough to enhance the physical properties of the vessel. This implies that utilitarian use of the vessels was not considered primarily advantageous. The way of building a pot is also considered to be culturally determined (van der Leeuw 1993). In the Százhalombatta sample so far only slab building technique can be observed which representative for both the Nagyrév and Vátya periods.

In this thesis, it is argued that the regularities in the amount of grog and its properties together with the slab building technique constitute technological style. In this thesis, these practices are considered to be a 'core technology' and this 'core technology' constitutes the

technological style. This technological style seems to be consistent through the Nagyrév and Vatya periods and it is argued that these practices may constitute group identity. It can be considered that potters are required to choose among a considerable variety of options dictated by their cultural background. These choices considered to be culturally significant and purposeful (Lemonnier 1989). Moreover, it can be considered that the practice of putting back the grog in the vessel maintained group identity, tradition and strengthened the community's notion of belonging together.

It is argued that through these practices cultural memory may have been an important arena through which the social system maintained its heritage. It can be considered that the notions of remembering are embedded within everyday social practices and manifested by ceramic technology. Moreover, since these regularities are representative for both the Nagyrév and Vatya periods it can be considered that communal identities, constituted by ceramic technology, were a key element of material life.

Considering the technological style established above there are hardly any departures from these rules and this consistency can be observed in both urns and squashed shape vessels through the Nagyrév and Vatya periods. This regularity within the assemblage suggests that there was a need for producing socially acceptable goods, but the acceptability was not expanded to the whole potting process. It seems that the 'core technology' of the potting process was standardised and represents continuity through the Nagyrév and Vatya periods although the shape, surface process and decoration of the vessels were practiced according to other sets of rules. This structured material environment was utilised even on the extent that lessened the functional efficiency of the vessels.

It is notable however that some vessels seem to exploit the technical advantages of using more grog. This practice is relating to the better performance of the material during drying and firing (DeBoer & Lathrap 1979). It is not to argue that ceramic technology is essentially functional but opposed to functionalism, in this thesis ceramic technology is considered to be social. It is argued that world views, values and social relations are expressed through technology and the produces of technologies are not only objects but repository of personal practical and cultural knowledge that can serve as an arena of maintaining and rearranging social relationships (Sofaer Derevenski & Sørensen 2002). However, one should remember that pottery serves as utilitarian object in day-to-day activities as well and must be understood within its social and economic context.

End product of the research and its importance:

The end product of this research will contain a detailed study of Hungarian Bronze Age ceramic technology and its relation to social dynamics and complex cultural tradition. The established data sets will be used to explore the representations of group identities within a given settlement and period. This thesis will be a unique synthesis of data, since in Hungary prehistoric ceramic technology has never been subjected to scientific analysis and in the Hungarian archaeological tradition while material culture has been the focus of cultural study, the processes leading to the objects have never been subject to analysis.

Structure of the Thesis

Chapter 1: Introduction

Chapter 2: Background to the Nagyrév and Vatya Periods

This chapter provides an outline of the two periods. The different approaches and history of the two periods are discussed. The chronological position of the Nagyrév and Vatya periods within Hungarian Bronze Age and the internal chronology of the

two periods are examined. An outline of the social organisation of the Nagyrév and Vátya periods is provided as it is recently understood through the analyses of cemeteries and settlements. The traditional typological approach is criticised and argued that the typological approach does not provide a satisfactory explanation for the technological tradition of the two ceramic practices. The ceramic tradition of the two periods is outlined and it is further argued that the traditional view of ‘fine’ and ‘coarse’ ware distinction is not satisfactory.

Chapter 3: Concept of Technology

In this chapter the social nature of technology is argued and a various uses of the concept of technology are reviewed.

Chapter 4: Examination of Ceramic Technology

This chapter reviews the different approaches to ceramic production and use in the archaeological literature. The different stages of the ceramic production are discussed with special regard to physical properties of the vessel and its relationship with tempering.

Chapter 5: Theoretical Background to Technological Style

Chapter five draws the theoretical framework of technological style. The ceramic tradition of Százhalombatta will be explored through this framework. Some of the principles of previous researches on style and a review of the various uses of style are also presented. In this chapter Pierre Bourdieu’s concept of *habitus* is presented and by using the concept of *habitus* it aimed to explain certain regularities within Bronze Age ceramic technology.

Chapter 6: Cultural Identity, Time and Cultural Memory

This chapter considers that ceramic technology is intimately connected with belief systems and considers the practices that were fundamental in the constitution and reproduction of social information. This chapter draws attention to cultural identity which refers to the ways in which group of people are distinguished from the ‘significant’ others. It is considered that cultural identity is a systematic establishment of similarity and difference. It is argued that ceramic technology can constitute cultural identity, which needs to be preserved and remembered by later generations. In this respect time can be considered as socially constituted concept.

The concept of cultural memory is used with reference to the group rather than to individuals. Cultural memory is the people’s collective understanding of the past constructed in a given social and historical context. These practices emphasise the ideology of unity and continuity, reinforcing the link of the past with the present.

Chapter 7: Petrological Analysis

This chapter presents the analytical methods, which helps us to explore the ceramic technology of the two periods. This chapter explains the principles of microscopic analysis and ceramic petrology together with the establishment of fabric groups. The selection and the preparation of the samples are also discussed.

Chapter 8: Case Studies

This chapter presents the ceramic materials from Százhalombatta and different contemporary sites. The geographical situation and the chronology of the sites are also outlined. This chapter discusses the comparative materials of each site in details and

discusses the results of the technological analyses of the ceramic practices. Through the presentation of microscopic analysis and ceramic petrology the compositions of clay, surface processes, forming methods and firing techniques are discussed and the results are compared.

Chapter 9: Interpretation

This chapter interprets the data through theory. Through the examination of ceramic technology it is argued that the technological style of the two periods served to express cultural identity. It is considered that collective identity is culturally and historically determined and technology can play a role in binding people together. Moreover, it is considered that social memory is maintained through ceramic technology and the social system may have confirmed and maintained its heritage through ceramic technology.

Chapter 10: Conclusion

In this chapter the aims and the results of the thesis are summarised.

Appendices

Reference List

REFERENCES CITED

- Arnold, D. E. 1997. *Ceramic Theory and Cultural Process*, Cambridge: Cambridge University Press.
- Bándi, G. 1960. *Előzetes Jelentés a Sárbogárd-Cifrabolondváron Végzett 1959. évi Ásatásról*. Alba Regia 1: 149-153.
- Bándi, G. and Kovács, T. 1974. *Adatok Dél-Magyarország Bronzkorának Történetéhez*. Janus Pannonius Múzeum Évkönyve 1969-1970 14-15: 97-111.
- Barley, N. 1984. 'Placing the West African Potter'. In *Earthenware in Asia and Africa*. Picton, J., London: Percival David Foundation 93-105.
- Barnett, W. K. and Hoopes, J. W., Eds. 1995. *The Emergence of Pottery: Technology and Innovation in Ancient Societies*, Washington: Smithsonian Institution Press.
- Barrett, J. C. 2000. *A Thesis on Agency*. In *Agency in Archaeology*. Dobres, M. A. and Robb, J. E., London: Routledge 61-68.
- Bóna, I. 1975. *Die Mittlere Bronzezeit Ungarns und ihre Südöstlichen Beziehungen*. Archaeologia Hungarica IL. Budapest, Akadémiai Kiadó.
- Bóna, I. 1992. *Bronzezeit in Ungarn. Forschungen in Tell-Siedlungen an Donau und Theiss*, Frankfurt am Main.
- Bourdieu, P. 1990. *The Logic of Practice*, Stanford: Stanford University Press.
- Braun, D. P. 1985. *Ceramic Decorative Diversity and Illinois Woodland Regional Integration*. In *Decoding Prehistoric Ceramics*. Nelson, B. A., Carbondale: Southern Illinois University Press. 128-153.
- Conkey, M. 1990. *Experimenting with Style in Archaeology: Some Historical and Theoretical Issues*. In *Uses of Style in Archaeology*. Conkey, M. and Hastorf, C., Cambridge: Cambridge University Press 5-17.
- DeBoer, W. and Lathrap, D. 1979. *The Making and Breaking of Shipibo-Conibo Ceramics*. In *Ethnoarchaeology*. Kramer, C., New York: Academic Press 102-138.
- DeBoer, W. R. 1991. *The Decorative Burden: Design, Medium and Change*. In *Ceramic Ethnoarchaeology*. Longacre, W. A., Tucson: University of Arizona Press 144-161.
- Dobres, M. A. 2000. *Technology and Social Agency*, Oxford: Blackwell.
- Hantman, J. L. and Plog, S. 1982. *The Relationship of Stylistic Similarity to Patterns of Material Exchange*. In *Contexts for Prehistoric Exchange*. Earle, T. K. and Ericson, J. E., New York: Academic Press 237-263.
- Hodder, I. 1982. *Symbols in Action. Ethnoarchaeological Studies of Material Culture*, Cambridge: Cambridge University Press.

- Ingold, T. 2000. *The Perception of the Environment. Essays in Livelihood, Dwelling and Skill*, London: Routledge.
- Jenkins, R. 2000. *Social Identity*, London: Routledge.
- Jones, S. 1997. *The Archaeology of Ethnicity: Constructing Identities in the Past and Present*, London: Routledge.
- Kovács, T. 1963. *Jelentés az Aba-Belsobáránd-Bolondváron Végzett 1960. évi Ásatásról*. Alba Regia 1961-1962 2-3: 131-136.
- Kovács, T. 1969. *A Százhalombattai Bronzkori Telep*. Archaeologiai Értesítő 96(1): 161-169.
- Kovács, T. 1974. *Bronzkori Urnatemeto Törtelen*. Folia Archaeologia XXV: 33-47.
- Kovács, T. 1975. *Historische und Chronologische Fragen des Überganges Von Der Mittleren Zur Spätbronzezeit in Ungarn*. Acta Archaeologica Academiae Scientiarum Hungaricae XXVII: 297-317.
- Kovács, T. 1978. *Középső Bronzkori Edénylelet Mogyoródról*. Archaeologiai Értesítő 105(2): 217-222.
- Lemonnier, P. 1989. *Bark Capes, Arrowheads and the Concorde: On Social Representations of Technology*. In *The Meanings of Things: Material Culture and Symbolic Expression*. Hodder, I., London: Unwin Hyman 156-171.
- Miller, D. 1985. *Artefacts as Categories*, Cambridge: Cambridge University Press.
- Pfaffenberger, B. 1988. *Fetishised Object and Humanised Nature: Towards an Anthropology of Technology*. *Man* 23: 236-252.
- Pfaffenberger, B. 1992. *Social Anthropology of Technology*. *Annual Review of Anthropology* 21: 491-516.
- Plog, S. 1983. *Analysis of Style in Artifacts*. *Annual Review of Anthropology* 12: 125-142.
- Poroszlai, I. 1996. *Ásatások Százhalombattán 1989-1995*. In *Százhalombatta* 5-15.
- Poroszlai, I. 2000. *Excavation campaigns at the Bronze age tell site at Százhalombatta-Földvár I. 1989-1991, II. 1991-1993*. In *Százhalombatta Archaeological Expedition Annual Report I. Field Season 1998, Százhalombatta* 13-73.
- Rice, P. M. 1987. *Pottery Analysis: A Sourcebook*, Chicago: University of Chicago Press.
- Rye, O. S. 1981. *Pottery Technology: Principles and Reconstruction*. *Manuals on Archaeology* 4.
- Sackett, J. R. 1985. *Style and Ethnicity in the Kalahari: A Reply to Wiessner*. *American Antiquity* 50: 154-159.
- Sackett, J. R. 1986. *Style, Function and Assemblage Variability: A Reply to Binford*. *American Antiquity* 51: 628-634.

- Sackett, J. R. 1990. *Style and Ethnicity in Archaeology: the Case for Isochrestism*. In *Uses of Style in Archaeology*. Conkey, M. and Hastorf, C., Cambridge: Cambridge University Press 32-43.
- Shanks, M. and Tilley, C. 1987. *Social Theory and Archaeology*, Oxford: Basil Blackwell.
- Shanks, M. and Tilley, C. 1996. *Re-Constructing Archaeology: Theory and Practice*, London: Routledge.
- Sofaer Derevenski, J. and Sørensen, M. L. S. 2002. *Becoming Cultural: Society and the Incorporation of Bronze*. In *Metals and Society. Papers from a Session Held at the European Association of Archaeologists Sixth Annual Meeting in Lisbon 2000*. Ottaway, B. S. and Wager, E. C., BAR International Series. 1061 117-121.
- van der Leeuw, S. 1993. *Giving the Potter a Choice. Conceptual Aspects of Pottery Techniques*. In *Technological Choices. Transformation in Material Cultures Since the Neolithic*. Lemonnier, P., London: Routledge 238-288.
- Wetherell, N. 1982. *Cross-cultural Studies of Minimal Groups: Implications for the Social Identity Theory of Intergroup Relations*. In *Social Identity and Intergroup Relations*. Tajfel, H., Cambridge: Cambridge University Press 207-240.
- Wobst, H. M. 1977. *Stylistic Behavior and Information Exchange*. In *For the Director: Research Essays in Honor of James B. Griffin*. Cleland, C. E., Museum of Anthropology of Michigan. 61 317-342.