SYMBOLIC TECHNOLOGIES

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Technologies and symbols

The present paper approach less discussed subject in archaeological research, i.e. the symbolic value of the technologies of building and deconstructing in prehistoric material culture, with a study-case in the Balkan-Danube-Carpathian Chalcolithic.

In his classification of human behaviour, Leach (1983:9) insisted on "*technical actions*, which serve to alter the physical state of the world "; according to this, all aspects of behaviour could have a symbolic connotation.

The association of symbolism with technologies could be perceived, in a primary phase, as an oxymoron, but, a minute approach of the subject would reveal that technology could co-exist with symbolical processes, because, as Lemonnier stressed, "men put meaning into the very production of techniques as well as make meaning out of existing technical elements." (Lemonnier 2002: 17).

In this perspective one could search for a symbolical connotation even into the intimate structure of the technology, which is the *chaine opératoire*. If the "[c]*haine operatoire*", that is a series of operations which transforms a substance from a raw material into a manufactured product" (van der Leeuw 2002: 240), seemed to have been until recently a rigid process, determined by the nature of the processed material, current approaches tended to present it as being a subjective choice of the technologist, being able to produce variants according to symbolic choices.

The choice (in the *chaine opératoire*) - a symbolic act

As the most eloquent example to illustrate this subtitle I chose the potter's choice of the temper, an action with functional and symbolic meaning at the same time. The choice of the temper is one among many symbolic choices during the process of manufacture of the clay object, because parallel with the functional *chaine opératoire*, there is another one, the symbolic *chaine opératoire,* comprising the succession of the symbolic operations.

An act of choosing a technical variant is a symbolic action; the temper in the clay paste could be dung, sand, grog, crushed bones or flint, due to the symbol the community intends to transmit.

To be precise, the choice belongs not only to the individual, but is created inside the symbolic paradigm of the community; it is in fact the community's choice.

Even without the symbolic decision of the technologist a *chaine opératoire* can develop into a symbolic action, if its meaning is analogous to the meaning of other *chaine opératoire*, therefore being in a relationship of significance.

***Chaines opératoire* and functional-symbolic activity**

I believe I identified an example of such relationship between *chaines opératoire* in the Balkan-Danube-Carpathian Chalcolithic traditions, whose material culture is characterized by a process of construction and

deconstruction from the micro level of ceramic objects to the macro level of the *tell* settlements. Characteristic for the material culture of these traditions is that all *chaines opératoire* of the categories identified were symbolic and in a symbolic relationship between them.

Additionally, by studying traditional cultures, I noticed the existence of some relationships of interdependence between the cultural categories, and, as Lemonnier pointed out, « ..parler de systeme technique permet aussi de mettre l'accent sur l'interdependence, l'interaction, des elements qui le constituent.. » (Lemonnier 1983 : 12).

A tell from Eastern Europe Chalcolithic is a "cumulative place-value" (Chapman 1994 a: 138) and an additional (Sherratt 1983: 192-3) result (of many overlapped levels of inhabitation. A further description of the ensemble which represents a tell could be the following: a symbolic mode of dwelling on a limited surface surrounded by a palisade and ditch (see Gheorghiu 2000b ; 2002a ;2003a ; 2003b ; 2005), with cyclical construction and deconstruction processes. Every wattle and daub house represents a symbolic system made of ovens, ceramic vases, figurines and innumerable objects made of perishable materials (see Gheorghiu 2000a ;2002a ; 2003a ; 2003b; 2005), that are constructed and deconstructed in the same way as the settlement.

A case study: A tell settlement or additive and subtractive technologies
(after Gheorghiu 2002a)

TELL[1]									
OBJECTS						**MATERIALS**			
LEVEL I OF SETTLING									
Palisade	**House**	**Oven or fireplace**	**Vases**	**Human body**	**Clay from ditches**	**Clay from pits and foundations**	**Clay from flooding**	**Wood**	**Vegetal (cereals chaff twigs, reed**
BEGINNING OF GROWTH									
Tracing the perimeter of the settlement									
ENTRANCES AND PASSAGES Orientation and delimiting the areas of passage; liminal zones marked by posts								Procurement of tree beams of 30 cm average	Procurement of twigs
Digging of a contour ditch following the perimeter					Addition of clay probably for houses				
Thrusting the wooden palisade **VARIANT**: with regular posts [2]; **VARIANT**: with thick and thin posts[3], plaited with twigs									

[1] The Boian-Gumelnita tells discussed are from south Romania and Bulgaria. The comments with Italics are the inferences of the author.

Covering the palisade with clay					*Addition of clay from ditches*				
THE CEASING OF THE PERIMETRAL GROWTH	**BEGINNING OF THE INTERIOR GROWTH**								
	Plotting[4] and orientation of houses[5]	*The foundation of ovens*	Mix of different clays with sand						
	Extraction of clay: digging of foundation ditch[6]	Building of ovens and exterior fireplaces[7]	Sacrifice of old vases	Fragmentation of human skeleton		Accumulation from the extraction from the sacrificial pits and deposition pits		Addition of large and thin beams	Addition of twig
			Selective addition of shards in tombs[8]	Addition through sacrifice[9] of children[10] or selective deposition of skulls					
	FLOOR								
	Wooden floor[11]	Oven's pedestal[12]						Addition of layers of split beams or planks	
	Covering with clay and plastering		Addition of a layer of slip						Straw binder and clay[13];
	Covering of the floor with a vegetal mat[14]		*Covering with a vegetal support like the demi-johns*						Vegetal mats plaiting
	WALLS								
	Thrusting the structural posts	Building of walls							

[2] Todorova 1982: 183, figs.114-115; 186, figs. 120-121; 188, figs. 124-125; 189, fig. 126; 190, figs. 128-129), Todorova 1982: 194, figs.135-137; 200, figs.147,149; 202, figs. 151, 153; 204, figs. 154-157); Todorova 1982: 218, fig. 71; 220, fig. 173; Gheorghiev 1963: 160.
[3] Todorova 1982: 206-212, figs. 159-165; Todorova 1982: 222-226, figs. 175-183.
[4] Todorova (1978: 48) and Marinescu-Bilcu (2000: 324) ; Todorova (1982: 206 ff.) and Marinescu-Bilcu (1997: 69).
[5] Todorova 1982: 183-231: Comsa 1990: 72, fig. 33).
[6] Marinescu-Bilcu et al. 1997: 68.
[7] Marinescu-Bilcu 1996-1998: 96
[8] Balteanu 1997: plate 42.
[9] Marinescu-Bilcu 1996-1998: 111).
[10] Marinescu-Bilcu 1996-1998: 111; Dumitrescu 1986: 78;
[11] Comsa 1990: 85; Todorova 1982: 152-153, figs. 95-97.
[12] Comsa 1990: 86.
[13] Haita 1997: 87
[14] Haita 1997: 88

	Thrusting non-structural posts								
	Plaiting of twigs[15] Plaited barns added to houses[16]								
	Mix of clay with organic materials (straws[17] and dung or shards[18]	Mix of clay with organic materials[19] and shards	Addition of crushed shards in clay						
	Addition of clay (sometimes as clods[20])		Clay prepared as clods			*The use of the clay from deposit pits or sacrificial pits*			Straw binder in clay[21]
	The building of interior walls and of the ceiling		The building of the vase						
	The making of the windows	The making of the openings	The building of the vase						
	The plastering of the walls and columns[22]		Addition of a slip layer						
	The painting of interior[23] and exterior walls and interior columns[24]	Painting	Crusted ware, graphite, slip, incisions						
	Building the roof								
	The covering of the roof with reed and clay	Oven in the form of the house	Covering with lids; sometimes the handles are architectural models			Clay		Poles for fixing[25]	Reed

[15] Marinescu-Bilcu 1996-1998: 111
[16] Nania 1967: 7.
[17] Comsa 1990: 90
[18] Marinescu-Bilcu 1996-1998: 111
[19] Haita 1997: 87
[20] Comsa 1990: 89
[21] Haita 1997: 87
[22] Dumitrescu 1986.
[23] Comsa 1990: 81
[24] Dumitrescu 1986
[25] Comsa 1990: 85.

	Addition of successive layers of clay and painting[26] on architectural objects[27] (habitations and barns[28])	Addition of successive layers of clay[29]	*Probably crusted ware*		Levelling of the soil by adding layers of clay[30]		Layers of natural accumulation due to water drain[31]		*Addition of cereals and fodder*
	THE END OF THE GROWTH; BEGINNING OF DECREASING								
	The intentional pull down of some unburned walls[32]	The destruction of the oven for levelling the foundation of a future building[33]	The fragmentation of vases *on ritual purposes*	The addition of shards near the human body in tombs				*The reuse of wooden structure*	*The reuse of vegetal cover o the roof*
	The transformation of the house in waste deposit or stable[34] Partial abandonment of the tell[35]								
	Intentional[36] or *accidental* burning of houses		Intentionally or *accidentally* burned vases					The combustion of wooden material	The combustio of all vegetal material
VARIANT: The space between the palisade and interior filled with recycled clay and rubbish/ceramic from the destroyed houses[37]	The pulling down of burned walls and the crushing and leveling of remains[38] to form a new platform for next buildings								

[26] Comsa 1990: 81.
[27] Gheorghiev 1963: 160
[28] Marinescu-Bilcu et al. 1997: 65-66.
[29] Marinescu-Bilcu et al. 1997: 65-66
[30] Haita 2000:53
[31] Haita 2000: 53.
[32] Marinescu-Bilcu et al. 1997: 66.
[33] Popovici et al. 2000: 17
[34] Popovici at al. 2000: 17
[35] Haita 1997: 88; Haita 2000: 53
[36] Haita 1997: 88
[37] Todorova 1978: 49
[38] Popovici at al. 2000: 17

Preserving the same perimeter	**VARIANT I: THE BEGINNING OF GROWTH** Addition of clay and ash layers and continuing dwelling					Digging pits			
VARIANT I: THE REDUCING OF GROWTH The filling of ditches[39] and the limitation of the surface of dwelling	The filling of ditches, the limitation of the surface of dwelling, and the increasing the number of houses								
VARIANT II: ABANDON The destruction of the palisade	**VARRIANT II:** Total abandon of the houses						Natural accumulation of sediments from flooding		
TELL LEVEL II OF SETTLING									
The reconstruction of the old perimeter, or of a smaller one[40]	The reconstruction of houses on old locations		Selection and crushing of shards and architectural debris			Digging of pits filled with fragments of burned houses[41]			
Emplecton walls made of the filling of palisade's wooden walls with clay mixed to waste	Floor prepared from destruction remains[42]; walls from clay with organic remains and shards[43]	Addition of shards or crushed architectural fragments	Addition of shards or crushed fragments	Addition of shards					
TELL LEVEL III OF SETTLING	ditto	ditto	ditto	ditto					
LEVEL N OF SETTLING The transformation of parts of the palisade into walls of houses [44]	The transformation of parts of the palisade into walls of peripheral houses								
LEVEL N + 1 (with a smaller perimeter) OF SETTLING The use of parts of the palisade as walls for peripheral houses[45], a change in the geometry of entrances	The use of larger parts of the palisade as walls for peripheral houses								

[39] Comsa 1986: 61
[40] Comsa 1986: 66.
[41] Comsa 1990
[42] Marinescu-Bilcu et al. 1997: 69.
[43] Marinescu-Bilcu 1996-1998: 111.
[44] Todorova 1982; 212, fig. 165
[45] Todorova 1982: 202, figs. 151, 153

LEVEL N + 2 OF SETTLING The identification of a large part of the perimeter of the palisade with the walls of houses; a complete disappearance in architecture of the rites of passage									

Perceived from the perspective of symbolic behaviour, the *tell*-settlement could be seen as the result of a complex functional and symbolic activity, defined by assemblages of symbolic technologies in different relationships of interdependence.

The symbol of recycling

At a close reading of the tell-settlement growth one can notice that, beside the functional and symbolic parallelism between the additive and subtractive processes, there is one more procedure which reintegrates in the new *chaines opératoire* material fragments produced from the anterior operations (Gheorghiu 2002a). I interpret this act of recycling the old material as a symbolic technology of rejuvenilization of the old substance of the settlement, the metonymic old fragment mixed with the new material representing a stage of a *chaine opératoire* designed to transgress the time.

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