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TOWARD A PHENOMENOLOGICAL COGNITIVE ARCHAEOLOGY

abstract

Archaeologists, neuroscientists and philosophers all aim to shed light on the holistic and co-constitutive role played by bodies and brains, objects and culture over the course of hominin cognitive evolution. Recent advances in neuroscience and brain imaging have enabled exploration of the foundation for tool using capacity in modern human brains. In tandem with this has been the development of cognitive archaeology, a perspective that seeks to uncover and engage with past ways of thought, as these can be inferred from surviving material remains. What I will suggest in this paper is that the phenomenological perspective can contribute to the methodological drive in cognitive archaeology. Phenomenology provides just the kind of access to consciousness and the mind required for an understanding of "ways of thought and action", including past ways of thought and action, to emerge. I will argue that pragmatic meaning-bestowing agency is operative throughout the Palaeolithic and I will suggest how empirical evidence can be understood in the terms suggested by phenomenological philosophers.

TOWARD A PHENOMENOLOGICAL COGNITIVE ARCHAEOLOGY

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1. Archaeologists, neuroscientists and philosophers all aim to shed light on the holistic and co-constitutive role played by bodies, brains, objects and worlds throughout hominin cognitive evolution. Hominins include modern humans (*Homo sapiens sapiens*) and all of our fossil ancestors: hominins are hominids, as are the great apes (Coward and Gamble 2009, p. 64). Archaeology can, with an increasing precision, tell us where and when modern humans emerged: Africa between 100.000 and 200.000 years ago. The archaeological record itself began 2.5 million years ago with the appearance of the first intentionally modified stone tools.

The earliest archaeological sites are composed of assemblages of stone artefacts and fragments of animal bone that constitute the earliest (non-anatomical) evidence for human behaviour (Klein 2009, pp. 725-727). This is the Oldowan Industrial Complex. Oldowan tools display a complexity such that the ability to produce them is (probably) beyond that acquirable by living chimpanzees (Klein 2009, p. 733).

Human brains and the technology produced by them have been co-evolving since at least this period in the Early Stone Age (ESA) (Stout *et al.* 2009). Thus, it is not unreasonable to suggest that understanding human cognitive evolution will involve coming to terms with, amongst other things, tool use by our hominin ancestors.

A perspective that seeks to uncover and engage with past ways of thought as these can be inferred from surviving material remains and that is concerned with the development of the human mind has been evolving in archaeology since the early 1980s under the title *cognitive archaeology* (e.g. Mithen 1996; Renfrew 1983, 1993, 1994, 2007, 2009; Scarre 2005; Marshack 1972a, 1972b; Wynn 1979, 1981). Most recently cognitive archaeology has begun to engage with methodological questions in order to ascertain how it is possible to "learn how the minds of ancient communities worked" together with the "manner in which that working shaped their actions" (Renfrew 2007, p. 108). What I want to suggest in this paper is that the phenomenological perspective can contribute to this methodological drive in cognitive archaeology: phenomenology provides just the kind of access to consciousness and the mind required for an understanding of *ways of thought and action*, including past ways of thought and action. The promise of phenomenology for cognitive (and experimental) archaeology is that phenomenological analysis

can disclose the *workings of the mind*; the structures of action and agency, of temporality and consciousness, that can then be used to extrapolate how such structures shaped the actions of members of past communities.

2. Advances in cognitive neuroscience and brain imaging have enabled researchers to explore the foundations for tool-using capacity in both modern human and modern primate brains. Stout *et al.* (2009) have suggested on the basis of a recent (FDG-PET) study a thesis for the co-evolution of language and tool manufacture: they note that the neural "circuits supporting ESA toolmaking partially overlap with language circuits" and that this suggests that:

> these behaviours (tool manufacture and linguistic behaviour) share a foundation in more general human capacities for complex, goal-directed action and are likely to have evolved in a mutually reinforcing way (Stout et2009, pp. 15-16. Brackets: my addition).

Phenomenological thinkers attempt to elucidate our capacities for goal-directed activity within environments of pragmatic concern. Tool manufacture, for example, is guided by both pragmatic and social concerns and the action involved in producing these tools admits normative constraints. The use of equipment (e.g. a hammerstone) in the production of tools is structured intersubjectively: there are standards employed in getting this activity right (Gallagher and Zahavi 2008, p. 154)[1].

Third-person experimental results relating to tool manufacture (or to any form of practical engagement) must be "correlated to [a] subjects first-person experience" (Gallagher and Zahavi 2008, p. 16) if they are to be informative for studies of consciousness. From a holistic perspective the attempt to comprehensively engage with and understand the human mind must at some point "confront consciousness and subjectivity" (Thompson 2007, p. 16).

A dynamic shift between such perspectives when considering tool manufacture is prompted by at least two factors: i) the tools used in stone tool manufacture are highly personal (Stout *et al*). Test subjects were allowed to use their own hammerstones; ii) it is possible to discern traces of the styles of particular flint

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[1] Gallagher and Zahavi note that one difference between a piece of manufactured equipment and a naturally occurring object is that there are *right and wrong ways* to use manufactured equipment. In prehistoric contexts this division has to be augmented since naturally occurring objects (hammerstones, for example) were used as equipment without modifying them. Because of their deployment as equipment it follows that there were/are right and wrong ways to use such naturally occurring objects.

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knappers in the archaeological record of ancient cites (Stringer 2006, p. 83). Did these ancient knappers also have personal equipment? The first person perspective and its traces is announcing itself as a field of study. Our only access to the physical world, whether in field work or in experimental settings, is made possible by consciousness (Gallagher 2007; Gallagher and Zahavi 2008). Consciousness is the *sine qua non* "access we have to studying the physical world" (Gallagher 2007).

Phenomenological thinkers have suggested that it is possible to approach consciousness scientifically. Phenomenological approaches to consciousness will enable archaeologists to overcome the spectre of Cartesianism that has been affecting accounts of human cognitive evolution. Coward and Gamble suggest that human evolutionary studies remains "committed to a Cartesian model of cognition and consciousness" wherein cognition is "abstracted from its real-world context" (Coward and Gamble 2009, p. 52). Since the advent of existential-phenomenology such abstraction of consciousness and cognition from real world contexts has been anathema. Central to the work of phenomenological thinkers is their desire to reconnect agents with the world as they experience it. Phenomenology attempts to grasp and unfold the original meanings of agents' direct experience of the world (Chaplin 2001, p. 159). Phenomenologists are motivated by the desire to look at the world afresh from a first-person perspective (Merleau-Ponty 1962) so as to try to articulate our pre-reflective lived experience of that world without becoming embroiled in Cartesian epistemological problems.

Phenomenologists argue that *subjectivity* and *objectivity* are abstract notions that arise out of and are derivative from a far more basic, dynamic and complex unity named being-in-the-world (*In-der-Welt-sein*). What is essential to the structure of any experience is its intentionality: the experience's being about some object or other in the world. Phenomenological description will eventually lead from basic descriptions of objects to description of the basic dimensions of intentionality. Eventually, description will lead to an analysis of the conditions of possibility of our experiences. These conditions set-up our experiences into the forms that we experience them: phenomenology leads into an enquiry into the conditions of the possibility of intentionality, our bodily dealings with the world, our habits, our social and cultural practices, including our natural languages.

Phenomenological thinkers maintain objectivity in their descriptions by implementing methodological innovations generating results available to intersubjective corroboration (Gallagher and Zahavi 2008, pp. 19-28). Many subscribe to a naturalized phenomenology recognising that the phenomena

under study are part of the natural world and are also available to empirical and experimental investigation. Phenomenology ought to be informed by the most up-to-date science and science must be informed by phenomenological analysis: the result will be the best available account of subjective experience and its enabling conditions (Gallagher and Zahavi 2008, p. 30). Phenomenology can contribute to cognitive archaeology by enabling the best account of past ways of thought and action to emerge.

How is a piece of stone constituted as a cutting tool by an agent? Introducing the notion of *appropriative agency* can help answer this. Appropriative agency involves appropriation of aspects of the (material) world to discrete tasks. For Heideggerian phenomenologists the world is revealed as a holistic totality of significance relations wherein the being of any thing is determined by its use or readiness-to-hand in relation to an agent. *Being* is the meaningful relatedness that things can have for an agent.

Heidegger's account of practical engagement (Dasein) shows how an agent's purposeful appropriation of an item to the task of cutting, for example, constitutes that item as a piece of equipment. I suggest that such constituting behaviour (pragmatic meaning-bestowing appropriative agency) has been operative since the Palaeolithic: this is the phenomenological insight I want to bring to bear on problems in cognitive archaeology.

Example: a hammerstone is an item of equipment used by an agent in their daily work of making tools. Enquiry into the being of a hammerstone will ask about the structures by virtue of which it is available to an agent as ready-to-hand. The structures in question include the hammerstones' belonging to a context of equipment and to its referring to/pointing at other items to be appropriated, such as raw materials, into the agents' project. For Heidegger, the category of equipment is a paradigm case of the available and "all equipment is what it is and the way it is only within a particular context" (Heidegger 1995, p. 215).

Ready-to-hand items can become present-at-hand when they become objects of (quasi) scientific enquiry: the hammerstone shatters and the agents' normal fluid practical engagement with their useful tool is interrupted. They encounter a difficulty and an unanticipated situation. The transition from ready-to-hand to present-at-hand transpires when the occurrentness of the object obtrudes and it presents itself as a discrete property bearing entity needing fixed.
A piece of equipment is available when it is "defined in terms of its place in a context of equipment, typical activities in which it is used, and typical purposes or goals for which it is used" and when it "lends itself to such use readily and

easily, without need for reflection" (Dreyfus and Wrathall 2005, p. 4). The world and our acquaintance with it is the basis upon which the entities met in experience can be involved with one another and with us. Understanding (*Verstehen*) is the central dimension of agents' being-in-the-world. Meaning is use: what a thing is, is what it is understood to be by an agent within a particular context/community. Might hominin engagement with the world be characterised by *linguisticality*? Could hominin linguistic behaviour (gesture and speech) and tool manufacture be grounded in basic yet complex intentional activity within pragmatic environments?

In any case action-in-the-world reveals agents' general understanding of how things relate to each other and to their possibilities. Action reveals to agents' the general know-how inhabiting their understanding. This a matter of practical agency since understanding in Heidegger's sense is manifest in agents' projecting into possibilities for action that are afforded to agents' by how things in general are related to each other as a meaningful whole (Dreyfus and Wrathall 2005, p. 6).

3. Recently Gosden has emphasised the plasticity of brains and objects: "brains help make new objects, which in turn help create new brains" (Gosden 2009, 109). Plasticity is the ability of the brain to change as a result of experience (Ward 2006, 177). From an archaeological/object-centerd perspective Gosden considers how novel materials appearing in the archaeological record at different times (stone, bronze, iron) placed new demands on the brains and bodies of agents who engaged with them. The realisation that there is a holistic and co-constitutive role played by bodies, brains, objects and worlds over the course of hominin cognitive evolution can now be taken as a starting point when considering the complex relationship between brains, bodies and worlds (Gosden 2009, p. 108).

Embodied knowledge and bodily intelligence is the key to skilled productive activity and material objects can change and extend the body schemas of agents utilizing them. Gosden argues that our peripersonal space can be extended through objects: the creation of an object – his example is a sword – impacts on this sense of space and to the relationships between agents that is mediated materially by the object[2].
The *world of metals* aided the creation of different sets of social ontologies – networks of connections between agents and materials – than those created in the earlier *world of stone* (Gosden 2009, p. 116). In different periods peripersonal

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[2] Multiple agents might have been involved in the production of the sword in Gosden's example. The understanding how to work the different materials involved in producing the sword was probably beyond the ken of a single individual (Gosden 2009, 115).

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space and social interaction are constructed differently and such construction is fundamentally related to manufacturing objects (Gosden 2009, p. 116). The origination of such networks and relationships is available to phenomenological description by virtue of the disclosure integral to the creation of an artefact and phenomenology can aid the reconstruction of such disclosive events in the past.

Phenomenological analysis opens up such creative moments and so can contribute to cognitive archaeology. While it is not possible to recreate the minds of past agents something of a *fusion of horizons* is possible. The phenomenologico-hermeneutic recreation of networks of meaning in the past is possible and the phenomenological contribution to method in cognitive archaeology amounts to disclosing relations of *in order to* and *for the sake of which* that inhabited past agents' understanding *vis-à-vis* their cultural *know-how*. Such *know-how* is the enabling power of the social ontology that agents creatively inhabit.

The cognitive *archaeophenomenologist* is able to investigate the experience of tool manufacture on its own terms in order to give an account of the subjective experience of tool manufacture. Causal factors remain the province of cognitive science. Naturalised phenomenology will operate in terms of and will inform cognitive archaeology.

The phenomenological perspective can contribute to cognitive archaeology because it reconnects researchers with the world as it is experienced by a practically engaged agent, whosoever that agent is or was. Looking at the world afresh from a first-person perspective in order to articulate pre-reflective lived experience is the basic starting point for coming to terms with human cognitive evolution. Cognitive archaeophenomenology does not proceed by asking about *minds* and *brains* as separable entities but by inquiring into the structures enabling the production of both agents and meaningful worlds.

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