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Jannis Kozatsas

**The dialectic of practice and the logical
structure of the tool**

Philosophy, archaeology and the anthropology of
technology



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Introduction

Questions relating to technology make up one of the most discussed and widely investigated areas of archaeological and anthropological research today. In recent decades, the theoretical study of technology has been significantly advanced by the introduction of new investigative techniques, the development of interdisciplinary studies, and by a series of epistemological shifts (Gosselain 1992: 559; Sillar and Tite 2000; Stark 1999: 25). Nevertheless, throughout much of the twentieth century, most notably in the English-speaking Western world, technology played a marginal role in both disciplines despite the best efforts of neo-positivistic trends like ‘New Archaeology’ raising important questions about the production and use of material culture. By the late 1980s, the state of research was described paradigmatically by a comment from P. Lemonnier in response to a recently-published article by B. Pfaffenberger (1988): “to read about technology in an English-speaking anthropological journal is a sort of an event” (Lemonnier 1989: 526). Today, we can assert that in both archaeology and anthropology, the holistic treatment of technology as a multidimensional form of social practice that considers tools, raw materials, gesture sequences, embodied expressions, energy fluxes, natural forces, structured environments, cognitions, personal intentions, social needs, social relations, and cultural values (cf. Dobres 1999, 2000; Gosselain 2011a; Lemonnier 1992, 1993a; Sillar and Tite 2000), has at its disposal a broad and well-defined theoretical agenda, as well as a steadily growing empirical record.

Over the last three decades, both in Western archaeology and anthropology, a significant shift has occurred that has led to the recognition of technology as a critical issue, thereby establishing new agendas for research (Cresswell 1996; Dobres 1999, 2000; Ingold 2000, 2013; Latour and Lemonnier 1994; Lemonnier 1993b; Pfaffenberger 1992, 1999; Stark 1998a). This change has been neither unconditioned nor abrupt. On the contrary, it has stemmed from a series of intellectual developments that took place over the course of the late twentieth century and the beginning of the new millennium, altering the epistemological consciousness of the field. Two major factors have motivated current debates on the anthropology of technology: first, the diffusion of the French anthropological tradition into English-speaking academia; and second, the breaking down of the idealism of post-processual tradition into more phenomenological approaches — a process that endeavours to place greater emphasis on the material aspects of material culture. At the same time, broader developments from the 1980s onwards, including the advance of the philosophy of technology from a marginal topic of modern epistemology into a major academic field through the formation of Science and Technology

Studies (STS), have contributed to the creation of a vivid intellectual milieu that has forced the question of technology to the front line of contemporary debates. This theoretical shift in archaeology and anthropology has therefore transformed — as every genuine epistemological shift — the questions to be posed, the puzzles to be solved, and the prospects to be explored.

Current trends in French and American anthropology have placed explicit emphasis on the social grounding and cultural configuration of technological systems, which have aimed to re-conceptualise technology as a form of social practice (Dobres 1999, 2000; Lemonnier 1992, 1993a; Pfaffenberger 1992, 1999). Contrary to neo-positivistic thinking, technology tends to be understood as a dynamic field wherein the technical logic — considered as a kind of materially and physically-determined rationality — is profoundly interwoven with socio-cultural elements (Gosselain 2000). As I will argue in the following sections of this book, instead of the *analytic dualism* of the older processualism — a framework that kept the subject and the object apart from each other — the new approach adopts a kind of *synthetic dualism*, a method that allows for the subject and the object to be intrinsically connected in the technical practice itself. Despite their differences regarding the question of whether the technical and the non-technical (i.e., socio-cultural) dimensions of technology can actually be separated from each other, both currents have yet to effectively overcome the dualistic treatment of material culture, insofar as they admit that objective rationality and socio-cultural aspects must not be reduced on each other.

At the same time, contemporary “symmetrical” archaeologies and anthropologies of material culture have considered a parallel theoretical agenda, levelling substantial criticism against modern and post-modern dualism, and arguing for a radically monistic conception according to which any ontological differentiation between subjects and objects should be effectively discarded. Practical activity is thus understood as a unified “field of forces” or as a “seamless web” of ontologically indivisible variables. If French and American anthropologists have underlined the indispensable role of human culture in the articulation of technology, phenomenological approaches have stressed the need for a return from “anthropocentrism” (Knappett and Malafouris 2008: IX) to the “materiality” of material culture (e.g., DeMarrais *et al.* 2004; Ingold 2007, 2013; Knappett 2005; Meskell 2005a; Miller 2005a; Olsen 2010). The new “monism” of the symmetrical approaches is significantly different to earlier (as well as contemporary) analytically and synthetically dualistic views: it does not seek to find a way of bridging the gap between the subject and the object, i.e., between the socio-cultural sphere and the field of nature; it does not aim to reconcile the opposites, to make them compatible with each other through a unifying conception, but rather discards any ontological difference

as a bare axiomatic, non-justified (moreover, non-justifiable) presupposition that imposes an alien ontological character on the reality. Drawing both on early twentieth century phenomenological approaches and late twentieth century philosophy of science and technology, symmetrical approaches have proposed a new conception of technology and material culture with strong constructivist tenets.

Given this theoretical kaleidoscope of modern archaeological and anthropological understanding of technology, a sharp dichotomy has become obvious: on the one hand, dualistic approaches are striving to explain the way that two *ex hypothesi* ontologically different variables (the subject and the object or the socio-cultural and the natural) meet within material processes; on the other hand, recent monistic approaches are striving to create a cohesive theoretical reconstruction of the way that the *ex hypothesi* unified (uniform and singular) field of reality (or of the “Being”) develops. It is apparent that, on a meta-theoretical level, a new, radical opposition (a new form of meta-theoretical “dualism”) immediately arises: dualism vs. monism. Indeed, it is this opposition between dualistic and monistic ontologies that gives rise to a new set of theoretical asymmetries regarding the beings and the phenomena of the world, and the ways in which they relate to each other.

Consequently, the question regarding the possibility of an alternative approach that might be able to overcome this new emerging opposition can hardly be avoided: is it possible to conceive technology (namely, material culture and human practice) in such a way that would neither absolutise the subject-object opposition nor eliminate it by postulating an equally axiomatic monism? In the course of this book, I argue that modern dialectical tradition, as developed by G.W.F. Hegel in the early nineteenth century, deals with exactly the same problem of going beyond both dogmatic dualism and dogmatic monism, i.e., of conceiving reality (or “Being”) neither as primordially fractured or divided nor as originally singular and uniform, but rather as *originally united* not despite but due to the inherent, active, contradictory opposition of the subject and the object. As I further emphasise, although a theory of technology *per se* has never concerned Hegel himself and although there is today only a handful of general discussions on how Hegel could be read as a theorist of technology, there is still an unexploited pool of ideas that have seldom been taken into serious consideration, either by the philosophy or the anthropology of technology. Hegel’s reflections on the ontological and epistemological character of *practical activity*, including a series of early notes on the concept of the *tool*, represent a set of theoretical positions that open up the possibility of an alternative understanding of technology; an understanding that could overcome the opposition between dogmatic dualism and dogmatic monism.

This book comprises three major parts. In the first, I present a brief critical review of the current thinking in theoretical archaeology and anthropology, focussing on the conception of technology. Starting with the refutation of processual or neo-positivistic analytic dualism, I argue that neither synthetic approaches nor phenomenological monism can form logically viable alternatives for understanding the dynamics of technology, either as an anthropological phenomenon or as a form of material social practice. Synthetic conceptions do not go beyond dualism insofar as the subject and the object are presupposed as actual substances before their synthetisation; while phenomenological monism leads to the annihilation of the ontological integrity of the elements involved, and deprives the creative dynamism of human-thing relationships.

Following the critique of the theoretical premises and the epistemological consequences of modern archaeological and anthropological theories of technology, in the second part of the book I propose an alternative dialectical theoretical framework for understanding technology as a material social practice within which the natural and the socio-cultural can be conceived as neither externally synthesised nor ontologically liquidated. More precisely, I investigate the possibility of reframing the concept of technology through Hegel's concept of practice, according to which, the subject and the object are produced immanently in the technological process as mutually mediated and inter-constituted elements. Technology is thus considered as a self-mediating totality that can be structured around the mutual practical constitution of subject and object as *interrelational entities* and *unified opposites*. My argument is based on the reconstruction of a set of theoretical positions elaborated on by G.W.F. Hegel and other Hegel-inspired traditions of nineteenth and twentieth centuries, and explores the potential of classical dialectics for a productive understanding of technology beyond all forms of dualism and dogmatic monism.

In the third part, I focus on the presentation and interpretation of Hegel's conception of the logical structure and role of the tool in technological practice. According to Hegel, the tool represents an immanent element and a structural moment of technological practice, capable of revealing its concrete articulation. After a brief critical consideration of Heidegger's view on the tool concept, I undertake a detailed reconstruction of Hegel's approach as delivered through his early philosophical writings. Following Hegel, a tool is not a neutral means for transmitting subjective ends to an external object. Instead, it reveals the relational ontology of technological practice. Far from being a mere *thing*, a tool expresses the general form of the practical relationship between the subject and the object; the materialisation of the inherent unification of the natural and the socio-cultural within the technical activity itself. The concept of the tool renders explicit the mutual constitution and inherent unity

of the subject and the object as negatively interrelated beings, essentially, as relational entities generated within practice. Hegel's anatomy of the logical structure of the tool makes up a unique, though mostly ignored, theoretical model in the history of ideas. Ultimately, it can contribute to the re-imagining of the theoretical maxims of the contemporary anthropology of technology, and re-state the nature of humans' social relationship with nature and the world of material culture.