Review of *Creations of the Mind,* ed. Margolis and Laurence

Creations of the Mind: Theories of Artifacts and Their Representation, ed. by Eric Margolis and Stephen Laurence. Oxford: Oxford University Press, 2007. Pp. xii + 358.

   This fascinating collection on artifacts brings together seven papers by philosophers with nine by psychologists, biologists, and an archaeologist. The psychological papers include two excellent discussions of empirical work on the mental representation of artifact concepts – an assessment by Malt and Sloman of a large variety of studies on the conflicting ways we classify artifacts and extend our applications of artifact categories to new cases, and a review by Mahon and Caramazza of data from semantically impaired patients and from neuroimaging on concepts of living kinds versus artifact kinds. Following these are three papers on the development of artifact concepts in children, including a short but provocative piece by Keil, Greif, and Kerner arguing that there is a mismatch between the patterns of development for our concepts of artifacts and the patterns of representation we end up developing. The final part of the book includes authoritative papers on artifact use by insects, birds, and mammals, by primates, and by Australopithecines and Neanderthals.
   The philosophical papers give an overview of the state of the art in the metaphysics of artifacts. Two sets of questions dominate the literature on this topic. First, do artifact kinds have nominal or real essences? Do we decide on or define their natures, and are those natures available to us *a priori*? If so, to whom are they available – everyone who possesses the artifact concept, a privileged subset of conceivers, or the initial creator of the first artifact of the kind? Second, how should we understand the

functional nature of artifact kinds? Should we understand the function of an artifact as being imposed by its creator? By current users? Are artifact kinds teleofunctional, and if so, what distinguishes artifact kinds from other teleofunctional kinds?

In Chapter 1 ("Social Ontology and the Philosophy of Society"), John Searle summarizes the key points of his *The Construction of Social Reality* (1995) and *Making the Social World* (2010). Oddly, in those books Searle takes pains to insist that his account is only meant to deal with a special category he calls "institutional facts," and does not apply to social entities in general, especially those entities lacking what he calls "deontic powers." And even in this article, he does not mention artifacts. So it is left to the reader (and to Amie Thomasson in Chapter 4) to develop the implications of his work for artifacts. Richard Grandy, in Chapter 2 ("Artifacts: Parts and Principles"), works to blur the distinction between natural and artifact kinds, and to expand on Putnam's application of his twin-earth case to artifacts. He also discusses the problem of scattered objects as it applies to artifacts. Jerrold Levinson (Ch. 5, "Artworks as Artifacts") returns to the account of artworks he originally presented in "Defining Art Historically" (1979), and discusses its application to artifacts. Levinson has an "intentional-historical" account of works of art, arguing that an object is an artwork just in case its creator had, in creating it, the intention that it stand in a certain relation to the art-world. Levinson's argument largely centers on his claim that these intentions need to be "backward-regarding" in particular ways.

Hilary Kornblith (Ch. 8, "How to Refer to Artifacts") refines the arguments of his "Referring to Artifacts" (1980) to argue against nominal-kinds theories of artifacts. Kornblith presents Kripke-style arguments to show that users of an artifact kind term need not have epistemic access to the kind's functional essence. Dan Sperber (Ch. 7, "Seedless Grapes: Nature and Culture") gives a variety of examples meant to meant to blur the distinction between natural kinds and artifact kinds. Sperber discusses

the relation between teleofunctional kinds and artifact kinds, arguing that there is a continuum of cases between biological and cultural productions, and between cultural productions with and with a clear purpose. Paul Bloom (Ch. 9, "Water as an Artifact Kind") also works to blur the natural/artifact distinction, taking up the longstanding debate on *water,* and arguing that it is a "hybrid" of an artifact kind and a natural kind.

Crawford Elder (Ch. 3, "On the Place of Artifacts in Ontology,") and Amie Thomasson (Ch. 4, "Artifacts and Human Concepts") present the most carefully worked out theories of artifacts in the collection. Both are strongly influenced by Ruth Millikan's work on teleofunctions. Elder's program is to develop a theory of "copied kinds," a large class which he claims many artifact kinds fall into. Copied kinds are closely related to Millikan's reproductively established families. Objects produced through a copying process, in Elder's view, have a copied shape, a Millikan-style "proper function," and they are historically related to other members of the family. Typically, on Elder's view, corresponding to this set of objects is a cluster of properties unique to it, pertaining to material composition, functional peculiarities that are copied, and propensities for historical change. Elder leaves it somewhat unclear whether membership in a relevant kind involves being appropriately copying-related, or exemplifying the corresponding property cluster, or both. But in any case, Elder's key intent is to argue that copied kinds, and artifacts by extension, "have genuine, mind-independent existence – existence caused by us, to be sure, but not constituted by our believing what we do about where artifacts are to be found." Also in the paper, Elder engages with recent work in metaphysics on coinciding objects – i.e., the problem of how two objects can occupy the same place at the same time.

Thomasson uses some of the same tools to arrive at a very different conclusion. She begins by following Searle, in taking the essences of artifact kinds to be constituted by our intentions. On Thomasson's view, artifacts are like Searle's institutional facts, except that they can involve

individual rather than collective intentions. But Thomasson's account draws as much from Millikan as it does from Searle, putting reproduction at the center. In opposition to Elder, she argues that the concepts of the person making an artifact must be "definitive of the specific features relevant to membership" in the artifact kind of which it is a member. In Thomasson's reproduction process, the maker has epistemic privilege with respect to the artifact kind – otherwise, the maker is just "messing around." Thus Thomasson sets a much higher bar on what it takes to count as a genuine maker of an artifact than most of the other authors do.

Building on Millikan's approach enables both Elder and Thomasson to find a plausible role for people or makers in artifact production, to give an account of the relation of artifacts to their functions, and also to explain why artifacts of a kind often if not always share physical characteristics. However, along with these virtues they acquire from Millikan, both Elder and Thomasson inherit two interrelated faults as well. First is a tendency to unify a huge range of diverse phenomena under one general template, when much of the data suggests that artifacts are metaphysically heterogeneous. Second, while both Elder and Thomasson are far more careful than Millikan is to distinguish the application conditions of a kind from the factors that determine what those application conditions are, they nonetheless treat the two as more closely connected than they likely should be.

It is sometimes overlooked that there are two potential roles for concepts and intentions, or mind-dependence, in artifact kinds. One is the role that traditional nominal kinds theories propose: concepts and intentions in setting up or determining or defining the application conditions of artifact kinds. The other is a potential role for intention in the application conditions themselves. It may be, for instance, that an object is a chair just in case it has some causal-role function, or it may be that for an object to be a chair requires that it have been built with some particular intention in the mind of the builder. A theory of artifacts might

assert or deny that concepts or intentions are involved in either of two roles.

Thus there are four different positions that could be held with respect to concepts or intentions in artifact kinds, and which different artifact kinds might fall into. One of the available positions is that both are mind-independent – the application conditions of artifact kinds *and* the facts that determine what those application conditions are. This is Elder's view, taking instances of artifacts to involve potentially mind-independent copying, and also taking artifact kinds to have their essences in virtue of facts about histories of copying processes.

A second position is that both the application conditions of artifact kinds and the facts determining those conditions are mind-dependent. This is Thomasson's view. She holds that artifact kinds have their application conditions in virtue of facts about intentional reproduction performances. She also holds that the application conditions for artifact kinds are themselves mind-dependent, since the intentions with which the artifacts are reproduced are constitutive of the essences of the kinds themselves.

Two other positions, however, do not surface in these articles or in other parts of the collection. One missing position is that of a traditional nominal kinds theory. Like Thomasson, the old-school nominal kinds theorist holds that intentional facts about us determine that artifact kinds have the application conditions they do. But like Elder, that theorist holds that the application conditions of artifacts are not themselves mind-dependent: typically, they are causal-role functions.

And there is a fourth position, which also goes unmentioned: that of the real kinds theorist who holds that artifact kinds have mind-dependent application conditions. The homeostatic property-cluster approach proposed by Boyd in "Kinds, Complexity, and Multiple Realization" (1999) and taken up by Mallon in "Social Roles, Social Construction, and Stability" (2003) might be an example of this position. On this view, a

kind like *chair* is a cluster of properties shared more or less closely by a set of objects. Each of those objects may have the property that it was built intentionally for a particular purpose, and hence for an object to be a member of that "property cluster" may require that it was intentionally produced for that purpose. But the "homeostatic" process that reinforces the continued intentional production may not itself involve concepts or intentions.

There is reason to think that different artifact kinds may fall into each of these four categories. In the third category, for instance, might be kinds like *watch* and *truck*. A Millikan-style teleofunctional account does a nice job explaining why we might not count a flat rock we find at the beach as a screwdriver, regardless of its causal-role function. But is it correct that no artifact kinds – complex or simple, explicitly introduced or discovered by social theorists – can be causal-role kinds? Even Millikan's staunch allies concede that certain biological kinds are causal-role kinds (see, for instance, Godfrey-Smith, *Complexity and the Function of Mind in Nature,* p. 23), and it is implausible that this should be entirely ruled out for artifact kinds. As for the fourth category, the examples Boyd and Mallon consider do not quite apply, since they discuss social roles more than artifacts. A similar approach, however, might be extended to event-kinds with intentional application conditions but whose unification into a kind is non-intentional, like *dance.* Or it might be extended to artifact kinds that are parts of complex social phenomena but that are simple to token intentionally, such as *word* or *utterance.*

Finally, a theory of artifacts might also consider the possibility, only briefly mentioned in Sperber's paper, that at least some artifact kinds may not involve functions at all, teleo- or otherwise. It may be, for instance, that the application conditions of certain artifact kinds involve nothing more than shape, as some of the studies discussed by Malt and Sloman suggest.

Despite these limitations, the papers in the collection are rich, clear, and well-argued, and all of them deserve careful attention. The volume is an indispensable resource for both research and teaching in this promising and interdisciplinary field, a field that is only in its infancy and will surely grow in importance over the coming years.