

Artefacts in Analytic Metaphysics: Introduction

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Artefacts increasingly become the subject of philosophical attention. In our field of philosophy of technology, they obviously already held centre stage, most notably in, for instance, the work of Don Ihde (1990), of Peter-Paul Verbeek (2005) and in the Delft *Dual Nature of Technical Artifacts* research program (Kroes and Meijers 2002, 2006). But outside of our field artefacts have also become a topic of analysis, as is witnessed in a series of recent publications. Research on artefacts is arguably suitable for cross-disciplinary research, since artefacts play a role in technology but also in, say, biology, psychology, cognitive science and architecture. Yet, some of that recent work seems to be conducted in relative isolation of the analysis of artefacts in the philosophy of technology, a situation which calls for establishing exchange and interaction between our field and the other fields involved. This development can also be witnessed in recent publications, and this special issue is another contribution to this exchange and interaction. Lewens (2004), for instance, wrote a monograph on the artefact model in the philosophy of biology, and this will be followed up with an edited volume (Krohs and Kroes 2009) in which analyses of functions of both biological items and artefacts are contrasted and integrated. Comparably cross-disciplinary volumes have been published on artefacts in the philosophy of psychology and technology (Costall and Dreier 2006) and in the philosophy of engineering and architecture (Vermaas et al. 2008). The importance of scientific instruments and experimentation for epistemology and the philosophy of science has been scrutinised in, e.g., Radder (2003) and Baird (2004).

Another subdiscipline of philosophy in which work on artefacts has appeared is analytic metaphysics. In this subdiscipline, traditional metaphysical inquiries into the nature, constitution and categorisation of reality are made by using the methods of analytic philosophy, such as formalisation and conceptual analysis. Philosophers have discussed the nature and categorisation of artefacts (Elder 2004; Baker 2007; Thomasson 2007b) and a volume has been published in which artefacts are approached from the perspective of metaphysics and cognitive science (Margolis and Laurence 2007). In this work, philosophy of technology seems not to play a detectable role. With the collection of papers we present in this special issue, we aim to strengthen artefacts as a topic for philosophical research. In particular, we want to start a cross-disciplinary exchange and interaction between philosophy of technology and analytic metaphysics. In this introduction, we set the stage for this exchange. We first present the way in which artefacts have typically been studied in analytic philosophy. Then, we sketch some

promising, very recent developments regarding the philosophy of artefacts. Finally, we give an overview of the papers in this issue.

State of the artefacts

To describe the background against which many papers in this issue have been written, we briefly take stock of the traditional situation of artefacts in analytic philosophy, in particular metaphysics. For this purpose, we distinguish two perspectives that have shaped most existing work on artefacts.

On the one hand, artefacts may be considered in a “detached” way. This does not mean that they are analysed as if they were completely independent from human interests. Rather, artefacts are compared with objects that are independent from human interests or it is examined whether artefacts are sufficiently independent to qualify as objects or as members of a natural kind. Many of the resulting issues belong to ontology or metaphysics, such as questions concerning the persistence conditions or the (relative) identity of artefacts.

On the other hand, artefacts may be regarded as means to human ends or as playing more intricate roles in human existence. We continually use, adapt, or even design artefacts for all kinds of purposes, and most of our knowledge about artefacts stems from and is applicable for practical purposes. Conversely, artefacts shape our everyday life and concerns, not only by enabling actions that are otherwise impossible, but also by influencing our choices, lifestyles and worldviews. These involvements with artefacts are of central importance in all these accounts, which may therefore be also labelled as “involved”. From a (sub-)disciplinary perspective, “involved” analyses of artefacts may raise epistemological concerns such as the justification of function ascriptions to artefacts. More broadly conceived, they also encompass action-theoretical analyses of artefact use and design and other attempts to arrive at what might be called a phenomenology of everyday life.

Arguably, the detached and involved perspectives on artefacts are intimately related. In analytic philosophy, however, they have been carefully distinguished. This distinction is part and parcel of the traditional focus of the few studies that pay attention to artefacts. Those studies share three prominent features:

1. Metaphysical dominance. Artefacts feature in analytic metaphysics, but hardly anywhere else – explaining why this special issue focuses on metaphysics rather than epistemology or action theory. An agenda-setting example of the metaphysical dominance is Van Inwagen’s (1990, ch. 13) “Denial Thesis” concerning artefacts and other composite, non-living material objects. This thesis concerns the existence of artefacts as material objects apart from their constitutive atoms – a concern that is immediately recognisable as ontological. By association, the “detached” metaphysical perspective is shared by the various responses to Van Inwagen’s argument: both the existence question and the concepts used to answer it are the same, although the answer is different. Even the intuitions of many metaphysicians appear to have been shaped by the Denial Thesis.¹ For example, Crawford Elder observes, without apparent irony, that many of his readers may find it hard to believe that a desk exists in addition to the pieces of wood out of which a carpenter fashions it (2004, pp. 131-132).

Furthermore, the dominance of metaphysical studies partly explains why the involved perspective on artefacts is typically ignored. The concerns of metaphysics appear to require a detached perspective: our involvement with objects is supposed to be irrelevant to their “real” nature; if it

is not, this reflects negatively on their metaphysical status. The metaphysical realism embraced by many analytic philosophers after the slow demise of logical empiricism is based on the assumption that “real” objects exist, have properties and can be classified independently of our experience and knowledge. Inverted, this assumption says that objects that do not show this independence are not real. Thus, if artefacts cannot be studied from a detached perspective, they are of no concern to metaphysics.

2. *Non-specificity.* Work on artefacts in analytic metaphysics is seldom specific. Efforts to analyse artefacts are typically a small part of much more encompassing philosophical projects, from David Wiggins’s (2001) plea for absolute identity to Lynne Rudder Baker’s (2000) constitution view. Furthermore, these efforts focus on one amorphous super-category of artefacts represented by a few paradigm cases of chairs, ships, clocks, statues and screwdrivers. It seems that only those philosophers who aim at a very complete and/or a very general understanding of the world care, at some point in their projects, to examine artefacts.

Non-specificity is not the same as inaccuracy. Perhaps artefacts are analysed correctly, as a first approximation or even ultimately, in the context of one or more larger metaphysical projects. However, one of the points raised in this issue is that more attention for specific philosophical details regarding artefacts – such as analyses of their use and design – would not only increase our understanding of artefacts, but could also contribute significantly to more encompassing projects in analytic metaphysics. Moreover, there are more artefacts than chairs, ships, clocks, statues and screwdrivers, and considering their differences may lead to valuable distinctions.

3. *Function focus.* Many philosophers who have studied artefacts characterise them as primarily *functional* objects. This “function focus” takes two different forms. One continues the ontological line of inquiry by defending the claim that functions are the essences of artefacts (e.g., Kornblith 1980; Wiggins 2001) – usually, but not necessarily,² combined with the claim that this essence is nominal rather than real. Similarly, some authors who discuss artefacts in the context of more general metaphysical issues, appeal to functions when determining the persistence conditions of artefacts (Baker 2000; 2004). Another form of function focus is found, outside of metaphysics narrowly defined, in general analyses of the notion of function (e.g., Cummins 1975; Millikan 1984; Neander 1991; Preston 1998). Such analyses are usually motivated by the problems regarding apparently teleological language in biology, but some claim to analyse functional discourse in any domain whatsoever, including that of artefacts. Typically, the application to artefacts of such general function theories is taken to be relatively unproblematic, and little effort is made to defend these applications, let alone to adapt them to any specific features of artefact functions. This again illustrates the non-specificity of existing analyses of artefacts.

But there are exceptions. Beth Preston (1998) develops her general, pluralistic function theory partly on the basis of a detailed consideration of artefact use and design. In the philosophy of technology especially Peter Kroes and Anthonie Meijers (2002; 2006) advanced a research program that more principally countered non-specificity by taking an empirical turn (2000) and analysing technical artefacts within technology. In this program, called *The Dual Nature of Technical Artifacts*, artefacts were explicitly taken as “(i) designed physical structures, which realize (ii) functions, which refer to human intentionally”, thus also taking artefacts as functional objects and relating them explicitly to designing. This research program aimed at understanding artefacts as “hybrid” objects that can only be described adequately in a way that somehow combines the physical and intentional conceptualisations of the world.” (2006, p. 2) As part to the results of this program we proposed, in line with the “involved” perspective, a framework for analysing justified function ascriptions to artefacts, where this framework explicitly includes an

action-theoretical description of artefact use and designing (Houkes and Vermaas 2004; Vermaas and Houkes 2006).

Recent developments

The three features described in the previous section characterise most of the existing accounts of artefacts in analytic philosophy. But there are signs that the situation is changing. Both in philosophy and in closely related, more empirical disciplines, recent work diverges from tradition.

In analytic metaphysics, recent work does not only show an increasing attention for artefacts, but also a shifting away from the situation described above. This does not constitute a radical break with the questions and notions used in this discipline. However, there is a gradual admixture of notions that are particular to artefacts and to the “involved” perspective.

One line of work that is quickly gaining prominence concerns the defence of artefacts as “mind-dependent” objects (Baker 2004; Thomasson 2003; 2006), and the discussion that ensues from this defence. This “artefact-apologetic” work questions the central assumption of metaphysical realism, that real objects exist, persist, and can be classified independently of human experience and knowledge. Specifically, it focuses on the way in which artefacts and their classification depend on human intentions, without automatically taking this dependence as a metaphysical deficiency. The main reason for this leniency is that artefacts are indispensable in everyday life.³ Moreover, the way in which they both make sense of and defend the metaphysical status of artefacts is by appealing to and analysing human attitudes and activities.

This transition is controversial and far from complete. Certainly not all recent metaphysical work on artefacts emphasises their mind-dependence. Elder (2004), for instance, develops a metaphysics of what he calls “copied kinds” – comprising both biological items and artefacts. These kinds are characterised by a common shape, a proper function and a set of normal circumstances, not by any type of dependence on mental states. Thus, Elder’s (2004, p. 140) description of the “nature of the copying process” for household screwdrivers scrupulously avoids all references to activities such as designing, manufacturing, or using. He even goes so far as claiming that “the essential properties that [the artisan’s] product will inherit stem from a history of function and of copying that began well before the artisan undertook his work. This history reaches forward through the artisan’s motions – it shapes his shaping.” (Elder 2004, p. 142).

Even more recent papers by Thomasson (2006; 2007a) and Elder (2006; 2007) show some of the problems and promises in emphasising the mind-dependent nature of artefacts. Most interestingly, perhaps, it shows how a metaphysics of everyday objects, like artefacts, should not and need not “[borrow] an idea suitable for realism about natural objects” (Thomasson 2007a, p. 72). Books by Baker (2007) and Thomasson (2007b) further explore how a metaphysics that is specific to artefacts may be constructed.

Their emphasis on mind-dependence brings to light interesting connections between the metaphysics of artefacts and some slightly older work in philosophy, as well as recent empirical studies on artefact representation and categorisation.

Existing definitions of the notion of “artefact”, or proposals to distinguish conceptually various types of artefacts, typically appeal to human intentions or activities – even though such

definitions are few and far between. To cite some of the more well-known attempts, an artefact is “an intentionally modified tool whose modified properties were intended by the agent to be recognised by an agent at a later time as having been intentionally altered for that, or some other purpose” (Dipert 1993, pp. 29-30); “An object o made by an agent Ag is an artifact only if it satisfies some type-description D included in the intention I_A which brings about the existence of o ” (Hilpinen 1992); or an artefact is “[a]ny object produced to design by skilled action” (Simons 1995). By the central place of intentional actions such as design, production and modification, all definitions appear to be constructed from the involved perspective. And of those who proposed definitions, Randall Dipert has developed a more encompassing analysis of artefacts that combines action-theoretical, epistemological and ontological elements.

Those who seek a more specific, more “involved” metaphysics of artefacts may not just look to existing definitions for support, but also to recent empirical studies. In the last decade, the representation and categorisation of artefacts have become a topic of considerable interest in, for instance, cognitive psychology. Much of this work is aimed at testing and developing general theories of concept formation, but specific experiments have been performed for the case of artefacts. The hypotheses tested in these experiments show some confluence with philosophical work on artefacts, in that the experimental hypotheses typically share the function focus described in the previous section. Some researchers, most notably Paul Bloom (1996; 1998), have even developed a function-essentialist view on artefact categorisation that is a psychological counterpart of the more metaphysical function focus mentioned above. More generally, this strand of empirical work has concerned the importance of recognising the intentions of authors and users in artefact categorisation – a concern that clearly conforms to the questions and notions developed in the involved perspective on artefacts.⁴ The changing focus in the metaphysics of artefacts may bring this work sufficiently close to cognitive studies to promote a fruitful interaction. A very recent example of this interaction are the papers collected in *Creations of the Mind* (Margolis and Laurence 2007).

Themes identified in this current surge of attention for artefacts include many features that are particular to them. One is the specific way in which artefacts may be said to be mind-dependent. Another is that artefacts are *used* and *designed*. Analysing these activities necessarily means taking an involved perspective on artefacts, even if one’s ultimate goal remains to determine the nature of artefacts. Despite their metaphysical goals, authors like Baker, Elder and Thomasson cannot avoid characterising design and its role in determining the function and nature of artefacts. Frequently, their characterisations appeal to designer’s (or user’s) *intentions*, both to explain mind-dependence and to show how characterising artefacts in terms of design would undermine realism about artefacts. And, finally, much current work retains the *function* focus of older work on artefacts, although there is more attention for the way in which artefact functions might differ from the functions of natural objects, and for theories of function ascriptions.

The papers making up this special issue also inquire into design, intentions, functions and the nature of artefacts. Some take a decidedly involved perspective, even on metaphysical issues that have traditionally been studied from a detached perspective. Others resist this tendency. In both ways, the papers continue and strengthen an exciting new movement in analytic philosophy: instead of treating artefacts as marginal objects, interesting only for the most encompassing metaphysical projects, they put artefacts into the centre of attention.

Overview of the contributions

In the first paper, Lynne Rudder Baker focuses on one important aspect of artefacts, namely their normativity – which manifests in the all-too-common phenomenon of artefact malfunctioning. According to Baker, malfunctioning should be regarded as an aspect of reality, and she rejects various “Deflationary” views that discard artefacts and malfunctioning simply on the basis of their mind-dependence. She offers her own Constitution View, which allows for mind-dependent objects such as artefacts, as a more adequate alternative.

The reality of artefacts and artefact kinds is also defended, on different grounds than Baker’s, by Marzia Soavi. She distinguishes various arguments – metaphysical, epistemological and semantic – that have been presented for the claim that there is a radical distinction between artefact kinds and natural kinds. After detailed scrutiny, Soavi concludes that none of these arguments is sound: they do not indicate a distinction between artefact kinds and natural kinds that is sufficiently large to support anti-realist claims regarding the former.

In the third paper, Massimiliano Carrara focuses on another aspect of artefacts that has drawn the attention of metaphysicians, namely their identity. Carrara considers a view on which, following Geach’s more general analysis, the identity of artefacts is relative to some general term. He finds wanting one type of support for this claim, based on considerations of cardinality; but he admits another that is based on the idea that “artefact” is not a sortal concept.

Wybo Houkes and Pieter Vermaas examine which limitations are set for an ontology of artefacts by the intuition that artefacts are non-natural objects. In the course of these examinations, they criticise the function focus of most existing accounts of artefacts, and they confront – and attempt to harmonise – two conceptions of artefacts: one in which they are instruments, and another in which they are intentionally produced objects. The authors conclude that, no matter the results of this confrontation, the basis for an ontology of artefacts is epistemological or action-theoretical.

Pawel Garbacz presents an account that may be described as an “ontologisation” of designing. Building upon Van Ingarden’s phenomenological work, Garbacz introduces the notion of intentional states of affairs, and analyses artefact designs in terms of this notion. The result, which accommodates a possible multiplicity of designs and a distinction between artefact types and tokens, puts an apparently epistemological notion at the heart of a metaphysics of artefacts – in a way that is both different from and markedly similar to that presented by Baker in her contribution.

In the final paper, Ulrich Krohs presents an account of technical artefacts in which they are described by means of two supplementary models – one physicalist and the other functional. Krohs argues that coherence between the two models can be provided through what he calls two-sorted theory elements, which map elements of one model on that of the other. Functions retain their central importance for artefacts, because they play this coherence-providing role, as Krohs argues and illustrates by means of an elaborate example.

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Endnotes

- 1 Another argument for the Denial Thesis is presented by Trenton Merricks (2001).
- 2 Ruth Garrett Millikan (2000) defends the claim that artefact kinds are functional and historical, but real.
- 3 Baker describes the deficiency assumption in traditional realist work as "bizarre" (2004, p. 14), given the enormous impact that artefacts have upon the world. Similarly, Thomasson claims that, without accepting mind-dependent or "human" kinds, it is impossible "to make sense of the human world" (2003, p. 607).
- 4 Relevant studies include those of Malt and Johnson (1992), Gelman and Bloom (2000), Matan and Carey (2001) and several contributions to Margolis and Laurence (2007).