ELSEVIER

Discussion

Finding the corkscrew

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Wybo Houkes's paper suggests that our knowledge of an artefact's possible and proper functions is unlike the kinds of knowledge that epistemological theories usually focus on. The differences concern the ways in which the information on which this knowledge is based relates to practical reasoning. One's first reaction might be that this gets things backwards. The link to practical reasoning comes *after* one has formed the belief that something is, say, a corkscrew, not before, in the formation of the belief. For it does seem obvious that once one has decided or discovered that something is a corkscrew then one's thinking about how to fill one's glass is richer. On the other hand one can learn that something is a corkscrew in ways that don't seem at all unusual: reading the label on the package, asking in the store for a corkscrew, desperately trying everything in a drawer until something gets a grip on the cork, and so on. To stop with this reaction, though, would be to miss Houkes's main point. That point can be put in the form of a mini-transcendental argument. (a) We do know what things are for; we know that a variety of things of extremely varied shapes are corkscrews. (b) If we took beliefs about the functions of artefacts to be based on the usual kinds of empirical evidence, straightforward testimony, and inference to the best explanation, then we would not have nearly as much knowledge of what things are for as we seem to. (c) Therefore we must acquire such knowledge in some other way, investigating which may tell us something interesting about knowledge in general. Houkes takes this a step further, to (d) the best suggestion about how we come to know the functions of artefacts is that we do so by making use of our capacities for practical reasoning—conceptualizing and prioritizing our aims, thinking out actions that might satisfy those aims, and then choosing among the actions.

In this commentary I shall begin with an example that provides support for (b). This will lead to reflections that lead to something like (d).

You are spending the weekend in a cabin in the woods, hoping that the isolation will help you overcome a philosophical writing block. But the owner of the cabin is obsessed by modern Design. You find drawers of kitchen implements, but none of them look like

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what you would take to be can openers, bottle openers, corkscrews, egg-cups, and so on. You're sure there's a telephone, but nothing looks like a phone. There isn't even an identifiable bed. There is no one to ask; nothing is labelled. You figure things out, by trial and a lot of error, to the extent that by the end of the weekend you have cooked a meal or two, washed the dishes, slept, shaved, showered. On the other hand you have ingested some frightful substances, broken some bottles in fury, spilled baked beans all over the floor, and spent a very uncomfortable night. (The first one. By the second night you have realised that what you had thought was a freezer was in fact a very comfortable bed.) But now you know how to open bottles and cans, cook a meal, and sleep comfortably.

On Monday morning the owner arrives. He is impressed with your discoveries and amused by your failures. He tells you that what you had taken to be an infuriatingly ineffective corkscrew is in fact a tooth-floss-holder, and what you had taken to be a pair of toothbrushes is/are in fact the long-searched-for corkscrew. (One has to insert the handles down the sides of the cork, whereupon the 'brushes' interlock and set up a shaking motion that eases the cork upwards. It works marvellously.) You say 'ah, now I see what that is', 'it's really an Ethernet connector' and so on[1].

The first stage of your investigation of the cabin leads you to know *how* to do a range of things. To that extent you know what functions some of the objects in the cabin *can* perform. Knowing how is related to propositional knowledge, knowing that, in complex and controversial ways. One uncontroversial fact is that people who know how to do something will often not be able to describe how they do it in words. Any beliefs they have about the actions that lead to the desired end are not conscious or not expressible in language available to them. And very often the verbal descriptions they can produce are false. (So the issue is complicated by differences about what is to count as belief, and about whether only information that counts as belief can be known.) So when by trial and error one discovers, for example, that that thing that looks like a hunting knife with a peculiar notch near the handle can be used as a can opener, one has both learned how to open cans with it and learned that opening cans is one of its possible functions.

Though acquiring the skill of using an object to achieve an end can give one the knowledge how to use the object, it is not the only way. One can know how to use a can opener even though one does not have the use of one's hands. As a result knowing how—and knowing the function of an object—does not require one to have the corresponding skill. At one point Houkes seems to deny this, saying that 'use know-how can thus be analysed as having two components: knowledge that a sequence of actions leads to the realisation of a goal, and the skills needed to take these actions'. But I think a slight reformulation can handle this. We ought to say that use know-how can depend to varying degrees on two components: knowledge that some actions of some type lead to a goal, and knowledge how to choose more finely grained actions of that type to achieve the goal. And then we can say that a standard way of demonstrating, and of acquiring, the knowledge-how component is via a corresponding skill. So at one extreme we have the case of the non-musician who knows that one function of a trumpet is to produce higher notes than a tuba can, but couldn't begin to produce them. And at the other extreme we have the case of an acrobat who knows that one function of the unicycle is to get across the tightrope, but has no idea how she manages to do this.

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[1] I hereby copyright any film plots arising from this commentary.

(The referee for this issue made an interesting suggestion in this connection, that, one can lose a skill without losing the correlative know-how, but one can't lose the know-how without losing the correlative skill. Of course one could cease to know how one does something—knowing that one does this and that to do it—while keeping either the skill alone or the skill and the know-how.)

I take it that this conclusion, that learning the possible functions of artefacts is closely linked to learning how to do things with them, is not controversial. (Note that there is no difference at this stage between knowing the possible functions of artefacts and of natural objects. One can learn how to open a can with a stone.) But it says nothing about how one acquires this particular kind of how-knowledge. The obvious suggestion is: by trying. One does various things with an artefact and eventually manages to achieve an end, and after some practice gets to the state of being able reliably to achieve it, knowing how. I think this leaves something out, though, and that is the global relationships between functions. An artefact-type comes into a world already full of artefacts being used for various purposes. (Comparison: a new biological species evolves into a world already containing other species filling and defining many niches.) There is more point inventing something that does something new, or does a better job at something that existing artefacts do, than there is inventing yet another mediocre way of opening a bottle. And the artefact must do the job without preventing pre-existing artefacts from fulfilling their functions. In thinking about the function of a mystery object, then, one can get a lot of guidance from knowledge of the functions of other objects in its environment of use: it has to fit into a pattern with them. This is one reason that the cabin problem is hard: so many of the artefacts in the cabin are new that the weekend guest cannot identify the function of any one of them by seeing what obvious gap there is in the familiar functions of the other ones. All the same, this kind of holistic consideration does apply in a more subtle way to cabin-type situations. Suppose that the guest tentatively assigns a function to some object. The guest will later assign functions to other objects, under the constraint that the whole set of functions has to fit together in a coherent way. If the function of a newly considered object duplicates that of the object tentatively labelled earlier then it is likely that one or the other of them has been mis-labelled.

Notice that in simply trying to get through a weekend without starving one does not have to engage very deeply with these questions of the overall pattern of functions. For an object used in the wrong way may do the job well enough. Note also that the range of objects found in a cabin is not likely to be great enough to support very conclusive reasoning from overall pattern to individual function, though it is unlikely that all of the objects will be can openers or pot scrubbers. And, thirdly, notice that this kind of reasoning will not be very effective when the purposes in question are aesthetic. Almost anything can, for example, be used to make an interesting noise, and the variety of combinations of interesting noise that might be of aesthetic interest is wonderfully unlimited. So if the designer who stocked the cabin is not of the 'form follows function' school then the guest who wants to make the transition from simple survival to knowledge of functions faces a much harder task.

When we move to considerations about the overall pattern of functions we are considering proper functions as well as possible functions. For it is proper functions that are fitted into patterns. An inventor tries to create something that serves a new task or serves an existing task better, and these tasks become the proper functions of the invention. (Not that the inventor's intention is indefeasible. There are many artefacts which, like duct tape

or crucifixes, were invented for one purpose and now have quite different uses as their generally accepted function.) So when we discover what an artefact can be used for by considering the functions of other 'nearby' artefacts we are reasoning from their proper functions to its proper function to its possible functions. I think that this is one reason why Houkes breaks off his discussion of possible function to consider proper functions: many of the interesting epistemological routes to possible function pass through proper function.

What intellectual capacities are needed in order to carry out this kind of reasoning? If we transported Leonardo da Vinci through time to a modern car repair shop, could he come to understand what the various tools are for? If what Houkes is saying is correct, the answer is: no, mechanical genius would not be enough. In order to appreciate the functions of modern tools Leonardo would have to appreciate the range of functions and subfunctions in terms of which designers and users of tools in modern life operate. The kind of knowledge involved is rather like moral knowledge on John McDowell's picture of it,[2] or knowledge of other people's characters. That is, in order to be in a suitable position to have the knowledge one has to be living a certain kind of life, one which is defined in part by the fact that people manage it by means of this kind of knowledge. The relation between the knowledge and the grounds for it is at first sight circular. And perhaps at last sight it is too, though this is something that will take a lot of arguing and disambiguating. To know what the functions of things are one has to be embedded in a context of artefact use, in fact in the context for which the objects were intended, which makes things difficult for archaeologists and time travellers.

Suppose this is right. Does it show, as Houkes argues, that 'a full account of knowledge of proper functions should describe a network of responsibilities, reasons and restrictions'? (Is (d), above, true?) A big yes and two small nos. Yes if this is a way of saying that in order to ascribe proper functions—and probably possible functions too—one has to have a complex background knowledge which is normally acquired by membership in the society which uses artefacts of many related kinds. No if it is meant to exclude the very unlikely possibility that one could acquire this background knowledge 'archaeologically' without membership in the society, let alone practical use of the artefacts. (I mean we shouldn't beg questions about how much we could learn at a distance. They're hard questions.) No also if it is meant to suggest that the person who knows about artefacts must accept and observe the standard system of responsibilities and restrictions. Gangsters know about guns, hackers know about computers, conceptual artists know about cars, coffins, and whatever else they use to peculiar effect. But the Yes is more important than the Nos: we usually know about the functions of artefacts because we can ourselves carry out a variety of social functions, which provide us with some routes to knowledge that we ought to understand better.

Reference

McDowell, J. (1978). Are moral requirements hypothetical imperatives? *Proceedings of the Aristotelian Society*, *Suppl. Vol. 52*, 13–29.

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[2] See for example McDowell (1978). The inspiration is ultimately Wittgenstein, which is one reason why most writers following this line are of such marginal intelligibility.