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Carl Knappett

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PHOTOGRAPHS, SKEUOMORPHS AND MARIONETTES

Some Thoughts on Mind, Agency and Object

◆ CARL KNAPPETT

Christ's College, University of Cambridge, UK

Abstract

The aim of this article is to investigate the agency of objects, a seemingly paradoxical statement within most recent western thought, in which agents and objects are sharply contrasted. However, in an important attempt to overcome the profound dichotomy between people and things, the observation that 'objects have social lives' has become something of a mantra in material culture studies. Yet rather more than a mantra is required if we are to move forward in our understanding of the complex workings of material culture; we need to investigate the potentially diverse *processes* whereby 'inanimate' objects come to be socially alive. To this end, an interdisciplinary approach is adopted that draws upon current research in archaeology, anthropology, aesthetics, sociology, and cognitive psychology.

Key Words ◆ agents/objects, ◆ hybridity, ◆ networks, ◆ icon/index, ◆ skeuomorphs

In his seminal 1986 article, Igor Kopytoff remarks upon a conceptual distinction between the universe of people and the universe of objects that is culturally axiomatic of western 19th and 20th–century thought. This and other articles in the volume *The Social Life of Things*, edited by Arjun Appadurai, has had a significant impact on the emergent field of 'material culture studies', currently populated by anthropologists, archaeologists, psychologists and sociologists. Kopytoff's observation has developed into one of the major themes of this diverse multi-disciplinary area, as a number of scholars strive to break down this basic western

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dualism of subjects and objects, of people on the one hand and things on the other. Indeed, the assertion that 'objects have social lives' is itself becoming axiomatic of the field. Yet, perhaps surprisingly, this statement has not received the full and direct examination it deserves. There are surely many *processes* through which objects come to be 'alive' (socially, and perhaps even biologically). The reverse is of course also true, with human subjects frequently given the status of objects.

But even in acknowledging that objects can be agents and agents can be objects, a dualism between objects and agents remains. Why is it necessary to identify any particular entity as agent or object anyway? Latour is particularly critical of this narrow distinction between what he calls humans and non-humans (2000: 11). The problem can be brought into focus by considering cyborgs and replicants. Donna Haraway (1991) has proclaimed herself a cyborg, part organism and part machine. To be a cyborg one does not have to be part made of steel as in the film *Terminator*; the technology need not be internal for Haraway and indeed any of us to be quintessential technological bodies. All humans, and not just postmodern ones, are nodes in complex technological networks; today they may include modems and motorways. The impact of bio-technology on our bodies is perhaps a more immediate, 'internal' example of the impossibility of dividing the natural from the artificial. If humans are to consider themselves as *technologized human agents*, then by the same logic a sophisticated robot with some approximation of human psychological powers could be dubbed a *humanized technological artefact* (Pickering, 1997: 46). But then where should the dividing line fall? Are the replicants of *Bladerunner* more human or more machine? Really we need not have to choose between one or the other. It is easier to conceive of terminators and replicants as hybrids because the hybridity is engineered into them. Humans today we may imagine to be a rather different sort of hybrid, networked into 'external' technological bodies (such as the modem and the motorway). Yet babies may increasingly be born with more and more technology within them, given the increasing proportion of bio-engineered foods in our diet. Quite simply, humans are in no way 'pure, natural beings' – they are inextricably caught up in the technological. Neither is this a phenomenon restricted to the 20th century onwards; since the development of stone tool technology, human agents have always been deeply technologized.

Agency clearly needs rethinking, if no useful distinction can be made between a 'pure' human mind and body (subject) within which agency resides, and an external world of objects onto which agency is projected. The long-dominant assumption that the internal, primary mind can be contrasted with an external, secondary 'world' is under fire from many quarters (e.g. Graves-Brown, and contributors, 2000). An alternative perspective is emerging in which mind, body and world are seen as

codependent. That is to say, an idea 'in mind' is rarely fully understood without some form of tangible expression (cultural representations brought forth from 'concealment') and, vice versa, an object cannot be properly grasped independently of how it relates to the body and indeed to its underlying idea. The two key characteristics of human cognition that are most relevant here are that the mind is *embodied*, and that the mind is *extended*. To convey these points a few examples should be useful: Scrabble tiles, Tetris, the Berliner key, and the sleeping policeman.

One of the examples used by Andy Clark (1997: 64) to demonstrate the codependency of 'internal' mind and 'external' world is the manipulation of the letter tiles in the game 'Scrabble'. Rather than just internalize the seven given letters and attempt to derive possible word matches in the mind, players tend to search for patterns by actually moving the letters around physically, trying to jog the mind 'from the outside' through external manipulation. Clark notes that research has shown a similar pattern of external manipulation amongst skilled players of the computer game 'Tetris'.

Another example comes from Latour (2000) who introduces us to a very particular kind of door key used in Berlin to access apartment buildings. The design of the key and the lock are such that on entering the apartment building the resident is also technically obliged to lock the door behind him. This form of access enforces strict boundaries on social relations, with tight controls on who can enter and leave the building at given times. Latour notes that the owners of the property would surely not have been able to impose such relations through any non-artefactual, non-technical means. The key becomes not simply a secondary expression of a social ideal that is primarily in mind; the key forms and moulds social ideals. Mind is in matter and matter is in mind, indivisibly.

A third and similar example consists of the so-called 'sleeping policemen' – speed bumps placed on busy roads in residential areas in order to slow traffic, thus reducing the danger to residents and particularly children. One might have thought that all drivers would have the sense to slow down of their own accord when driving in such areas but, as in the case of the Berliner key, moral and disciplinary codes tend to need technical and artefactual back-up. Even though most individuals in a society know in their own minds when they do wrong, the mere presence of a 'bobby on the beat' can be a useful physical reminder. Hence the term 'sleeping policemen' for speed bumps – they are agents/objects designed to force drivers to conform to a moral code. The responsibility for behaviour is not solely in the hands of the driver, but is distributed through the environment. As Harvey notes in relation to the Berliner key:

> . . . the key could be thought to reify particular attitudes towards property and security (held by those who promoted its design). It could also be seen as the displacement of anxieties about safety. The key now takes the responsibility, and the safety issue becomes a technical problem, with a technical solution. The intentions, opinions or previous habits of users become irrelevant as the key obliges them to act in a particular way. (Harvey, 1997: 9)

Through such examples it clearly emerges that idea, behaviour and artefact are codependent. Moreover, they demonstrate that agency is widely distributed, and inheres in the relationships between the various entities that constitute a field of action. The Berliner key is an agent, an active being, as are speed bumps and Scrabble tiles. But the real dynamism lies in the tensions between different agents, be they human key-users, or non-human keys, locks and doors. Indeed to understand fully the agency of the Berliner key (or any other artefact), it needs to be placed within a complex web of relations entwining users (residents), non-users (visitors, neighbours, burglars, and so on), property owners, estate agents, locksmiths, and steel manufacturers. A similar approach has been taken by Bijker (1995) in his research on socio-technical change; in examining the invention of the bicycle in the 1880s, a whole series of processes need to be fitted together in order to arrive at what he calls the 'technological frame'. His study shows that the bicycle, in its early development, emerged as an active vehicle in the negotiation of women's roles in society, encouraging new modes of dress and permitting changes in women's leisure activities outside the home. There are frequently so many interconnected active participants (agents) in a technology, be they human or non-human, that to employ the idea of a 'network' ('frame' in Bijker's terms, or 'field of forces', see Ingold, 2000) becomes almost unavoidable. The notion of networks demands fuller elaboration.

Agency comes to be distributed across a network, inhering in the associations and relationships between entities, rather than in the entities themselves. Mention has already been made of Bijker's work on the innovation of the bicycle, and how the artefact itself must be seen as simply one node in a wider network. One might also consider the modem, much more clearly acting as a node in a network. The modem does not have agency per se, and neither does its user, but the agency comes to be distributed across both of them through this dynamic link. Graves-Brown (2000: 4) emphasizes this 'mutualism' between nodes in technological networks. Latour (2000) is strident in his criticism of the entrenched philosophical idea that there exist humans in one sphere and things in another, preferring to see messy networks of impure forms that are constantly being modified, replaced, and rearranged. Gell (1998) too has developed the idea of networks in a strikingly innovative way, suggesting that personhood (an individual's

agency) does not reside in any one substrate, but is scattered spatially and temporally:

> A person and a person's mind are not confined to particular spatio-temporal coordinates, but consist of a spread of biographical events and memories of events, and a dispersed category of material objects, traces, and leavings, which can be attributed to a person and which, in aggregate, testify to agency . . . during a biographical career which may, indeed, prolong itself long after biological death. The person is thus understood as the sum total of the indexes which testify, in life and subsequently, to the biographical existence of this or that individual. (Gell, 1998: 222)

Thus is agency distributed across a far-flung network of people and artefacts, a social network that may stay in place even after the biological death of the individual.

At the beginning of this article it was stated that the main concern was with the diverse ways in which 'inanimate' artefacts come to be socially alive. Now the notion of the network has been introduced into the equation. The agency of an artefact is contingent upon the nature of its interconnections with other nodes in a network. It would be as well to remember that each network is a shifting affair, and any given artefact may move in and out of different networks. This movement itself will depend largely upon what stage an artefact is at in its life-cycle. At the moment of its creation, the emergent artefact is in the hands of an artisan or artisans who imbue it with agency, insofar as it becomes an index of the artisan's productive investment and cultural sensibility. That input may or may not be conspicuous in the artefact when consumed. Clark and Parry (1990) have coined the term 'conspicuous production', often the preserve of highly skilled artisans. As the artefact moves subsequently through different spheres of consumption new connections are made (human and non-human). The consumption of an artefact may be contested between two individuals or groups, thereby being drawn into two or more distinct but overlapping networks. The artefact would thus have no singular agency (or substitute 'meaning' for agency), but dual or even multiple agency. This is perhaps the norm. Bijker, in his study of the bicycle and the conditions surrounding its invention in the late 19th century, refers to this phenomenon as 'interpretative flexibility' (1995: 73–7). He states that at the time of its invention the bicycle known as the 'Ordinary' was not a single artefact, but was many artefacts, since 'the meanings given by a relevant social group actually constitute the artefact . . . there are as many artefacts as there are relevant social groups' (1995: 77). Any number of examples can be found to add support to this argument. A worker in an office might habitually use a particular coffee mug from amongst the general pool of coffee mugs in the office, and might seek to claim sole use of that mug, perhaps as a means

of asserting authority. Others of equivalent status in the office might very well contest such power games, and thus the everyday coffee mug becomes an active node in a struggle of wills, a potent material marker.

What I find myself moving towards is a discussion of meaning as well as agency. In most of the foregoing discussion, 'agency' and 'meaning' have proven to be quite interchangeable. Whether it is Gell (1998) commenting on the abduction of agency from artefacts, or Costall (1997) emphasizing the tendency for humans to adopt a teleological attitude to things (always asking what a thing is *for* rather than what it *is*), the same issue is at stake: the human need to interpret, to understand meaning and causation.

A WORLD OF SIGNS – ICON, INDEX AND SYMBOL

In other words, no entity, human or non-human, stands alone; we live 'in a world in which each thing speaks metaphorically of all others', (Bourdieu, 1977). It is the very nature of these manifold associations that are demanding of exploration. How is it, exactly, that one object comes to signal or 'be' something beyond itself? In a world of interminable reference, we should expect not only that one entity leads onto another, acting as a 'sign' for another, but also that there are various processes underlying this proliferation of signs. The study of signs is the domain of semiotics. A sign, very simply, is something that stands for something else (Wynn, 1995: 14). In the spirit of the quote from Bourdieu, it follows that just about everything has to be a sign of one sort or another. Charles Peirce (1932, 1955) distinguished between three different sorts of sign – icon, index and symbol. Let us now briefly examine them.

The sign is an 'icon' when its relationship with that to which it refers is one of perceived similarity. This may often be visual similarity, as with landscapes and portraits that are visually iconic of that which they depict. Other examples can be found on the computer screen, where various signs act as icons, as they bear a visual resemblance to their referents: the command 'print' is represented by a simplified graphic representation of a printer. Yet icons need not be visual; onomatopoeiac words have an aural similarity to that which they represent, for example the 'buzzing' of bees. One might also think of sensual icons (the rubber teat of a baby's feeding bottle) and olfactory icons.

The type of sign known as the 'index' conveys meaning in a different way. Smoke, for example, does not physically resemble fire, but is *caused* by fire and is usually contiguous with fire; thus the sign (smoke) may be described as an 'index' of the referent (fire). A number of examples of indexical signs are provided by Peirce, such as a barometer, a weather-cock, a knock on the door, a pointing finger, demonstrative pronouns (such as 'this' and 'that'), and even a sailor's rolling gait (Peirce, 1932:

vol. II, 160–2). Peirce defines the index primarily in terms of contiguity (i.e. a spatio-temporal connection). A pointing finger, for example, is a sign that relates to its referent through contiguity. One might say much the same of a weathercock, yet this does seem to be different in a crucial way: a weathercock is *caused* to move into a particular position by its referent, the wind. Yet the object at which a finger is pointing could hardly be said to 'cause' the finger to point. It seems that this ambiguity may also have been a source of confusion for Peirce, who on occasion appears to define indexical relationships more in terms of causality than of contiguity, when he says that an index 'denotes by virtue of being really affected by that object', or that an index 'could not continue to be a sign if its object were removed' (see Sonesson, 1989: 38–9).

The variable involvement of causality would thus seem to imply the existence of different categories of indexical sign. Some signs, such as weathercocks, barometers, thermometers, footprints, symptoms of disease, and cries of pain, require a causal, spatio-temporal connection with the referent. These signs may be referred to as 'indicators', and Peirce called such indices 'reagents'. Yet demonstrative pronouns and pointing fingers cannot be grouped in this category; they do not indicate states of affairs, they create them. Such indices are spontaneous, and have been dubbed 'performative' by Sonesson (1989: 53). Evidently, the index is a complex sign category that has attracted much debate, and it is a subject to which we shall devote further attention through the course of this article.

The third type of sign is the 'symbol', in which sign and referent are mediated by some formal or merely agreed-upon link irrespective of any physical characteristics of either sign or referent (Deacon, 1997: 70–1). The most obvious examples of symbols are in language – a particular letter is a symbol for a sound, and a word is a symbol for an idea. There is nothing intrinsic to the word 'dog' that can explain why it symbolizes a canine; it is merely an agreed-upon link within a particular linguistic convention (and other languages use 'chien' or 'Hund'). Material objects can also act as symbols – a wedding ring is a formal convention symbolizing a marital agreement.

How robust, then, are these three categories of sign? And are they all equally important in our attempts to clarify the nature of meaning in material culture? The last sign type discussed, the symbol, is not only reasonably straightforward in terms of its definition, but is also relatively uncommon in material culture. This may sound rather heretical, since the idea that material culture is 'symbolic' has been central to much recent archaeological theory. Yet it is apparent from Peircean semiotics that to talk about artefacts being symbolic is inaccurate most of the time. This is more than just splitting hairs – an important part of some post-processual theory has been that material culture can be read like a text

(e.g. Hodder, 1986). The problems with this metaphor can be more clearly seen once we realize that whereas words in a text may often be symbols in the strict sense, artefacts mostly are not. This is not to deny of course that artefacts are meaningful; it is simply to underline that we must look again at how their meaningfulness is constituted. It is the icon and the index, rather than the symbol, that are fundamental to our understanding of material culture meaning. However, both icon and index present difficulties of definition, and thus the majority of the following analysis will focus upon these two sign types.

It is important to remind ourselves that icon, index and symbol are not mutually exclusive. Deacon offers the following clarification with regard to the operation of the three types of sign:

> the differences between iconic, indexical, and symbolic relationships derive from regarding things either with respect to their form, their correlation with other things, or their involvement in systems of conventional relationships. (1997: 71)

It is stressed that no object is intrinsically iconic, indexical or symbolic, but is interpreted to be so. There is nothing inherently symbolic about a wedding ring; the relevant cultural knowledge is necessary for it to be appropriately understood as a symbol. Indexical signs too require a degree of cultural knowledge for interpretation, although this varies considerably for different categories of index. A pointing finger, for example, requires relatively little, and one might say the same for a cry of pain, or a footprint. However, to understand the rolling gait of a man walking along the street as an index of his days as a sailor surely demands rather more cultural understanding. To describe such cases, where the index stands for something with which the mind is already acquainted, Sonesson uses the term 'abductive' indices (1989: 53); these are contrasted with 'performative' indices such as pointing fingers (mentioned earlier). Even icons demand a certain amount of knowledge to be correctly interpreted, as in the case of trick drawings, when that which is depicted is not perceived until the viewer is informed of its presence. Context is also important, as Sonesson (1998) emphasizes through the example of the car, which may only become an icon of itself in certain circumstances, i.e. when exhibited in a car showroom. Furthermore, a single object may be understood variably as icon, index or symbol, in different situations, according to the perspective and intentionality of relevant social agents.

Indeed, there may frequently exist ambiguity as to whether a given object has meaning as an icon or an index. Moreover, in some circumstances these distinct forms of representation may overlap or merge. In pursuing this idea, the anthropologist Alfred Gell uses by way of example the polarized distinction between iconic and aniconic idols. Iconic idols

are 'realistic' depictions of a god, intended to portray a visible likeness. Aniconic idols, on the other hand, are usually considered not to bear any physical resemblance to the deity represented. Gell takes as an example of the latter the black meteoritic stones worshipped in ancient Greece (1998: 97). These, one might argue, acted as indices of the god's spatio-temporal presence, rather than visual icons. Yet Gell goes on to say that it would be missing the point to call such meteoritic stones any less 'realistic' than an iconic representation of the deity:

> Whatever the idol looks like, that, in context, is what the god looks like, so all idols are equally realistic, because the idol-form is the visual form of the god made present in the idol. (1998: 98)

Another example employed by Gell to explore the relationship between icon and index is that of an ambassador representing his/her country. Normally the ambassador would be considered as an indexical sign, a part of the whole (the country) representing the whole in the spatio-temporal absence of the whole. The ambassador could not be said to 'look like' the country he/she represents. But then, entities as vast, abstract and multidimensional as gods or countries cannot be said to 'look like' a single thing anyway. In the extract from Gell's book just quoted, the words 'in context' are the key. In the particular context of an ambassador representing his country, it could well be said that the country looks like him: he is the visible icon of the country. This perhaps can best be conveyed if in the same quotation we replace the words 'idol' and 'god' with 'ambassador' and 'country':

> Whatever the ambassador looks like, that, in context, is what the country looks like, so all ambassadors are equally realistic, because the ambassador-form is the visual form of the country made present in the ambassador.

This convergence of icon and index may indeed occur when that which is represented is a multi-facetted, spatio-temporally extensive phenomenon like a deity or a country. But what if that which is represented is rather less diffuse in time and space? Let us consider, for example, a person, surely far more confined to a single time and space than deities or countries. It ought, therefore, to be easier drawing a straightforward distinction between an iconic representation of that person, such as a portrait, and an 'aniconic', indexical representation. Many forms of object may fall into this second category. Objects in close physical connection with a particular individual's body, such as clothes and personal accoutrements, can become indices of the individual. Most 'biological' features are different from clothes and accoutrements in that they cannot be separated in space and time from the individual (although some can be altered, e.g. through tattooing). Hair, though, is one obvious exception (as well as other exuviae, such as nail clippings). When hair is

cut off and removed, it ceases to be part of the physical, biological person. Yet the biological and physical reality is relatively unimportant – that locket continues to be part of the social individual, and acts an an index of the person, just as clothes and accoutrements might.

Let us then, as our example, take hair as an index of the person. It is quite clear that it represents the person indexically rather than iconically. In Rohinton Mistry's novel *A Fine Balance* (1996), a central character is Rajaram, a man who collects hair cuttings for a living. To Rajaram, his collected hair cuttings are definitely 'realistic' representations of individual people. Rajaram says 'The hair is chopped off, but there is a whole life connected to it', and also 'By their hair shall ye know them'. Yet in another context entirely, the person might be 'realistically' represented by a portrait. There are two key points. First, there is nothing inherently more realistic about iconic representations. Second, the separation between the iconic and the indexical can be maintained, even if in the construction of meaning they often converge.

PHOTOGRAPHY

The convergence of icon and index is a theme that was indeed explored by Peirce himself, and by others taking a semiotic approach to art theory, such as Krauss (1985: 215) and Mitchell (1986: 59). The key example Peirce discusses is photography: photographs are, on the whole, iconic, since they bear a perceived similarity to that which is represented. But they are also indexical, in that 'the resemblance is due to the photographs having been produced under such circumstances that they were physically forced to correspond point by point to nature' (Peirce, 1955: 106). It has therefore been suggested that the photograph as a medium is a composite of icon and index. Being simultaneously icon and index, the photograph is different to 'true icons' because the directness of its physical creation seems 'to short-circuit or disallow those processes of schematization or symbolic intervention that operates within the graphic representations of most paintings' (Krauss, 1985: 203). Although in the case of photography the question of icon/index composites finds clarification, it is not the only medium in which this semiotic fusion can take place. Krauss draws attention to a work by the artist Marcel Duchamp called *With My Tongue in My Cheek* (1959). It is in one sense a conventional self-portait, in that the artist has sketched his profile to create a graphic, iconic likeness of himself (Figure 1). However, on top of this drawing he has added a relief area of chin and cheek, cast from his own face in plaster. Duchamp has fused an iconic representation of himself with an indexical impression to create a self-portrait that is 'split along the semiotic axis of icon and index' (Krauss, 1985: 206). Krauss considers that the influence of photography in the rethinking of models for

abstraction has been immense. Indeed she explains a major development in the art of the 1960s and 1970s as being a move away from codified systems of representation wherein elements in a painting are essentially symbolic, towards a 'sub symbolic' state lacking in codes. One might note that Barthes has characterized the photograph as seeming 'to constitute a message without a code', in contrast to the drawing 'which, even when denoted, is a coded message' (1977: 43). Krauss has described it as 'ceding the language of art back to the imposition of things' (1985: 203).

This discussion of the composite meaning in the photograph focuses on the *production* process. It is in the very moment of the photograph's creation, as light reflections find themselves imprinted upon a sensitive emulsion surface, that a causal, physical connection is established between sign and referent. Yet the production of objects/signs is not the whole picture – what about their *consumption*? Some of the examples used earlier, such as those drawn from Gell (1998), highlight the ways in which object and agent become connected through the process of consumption (e.g. the association between a kula necklace and a man of renown). It would appear at first glance that the indexical links that emerge in consumption must be quite different in character to those that emerge through production. Yet if this issue is given due consideration, it emerges that the differences are perhaps not as pronounced as initially imagined.

FIGURE 1 Marcel Duchamp's *With My Tongue In My Cheek (1959)*. Reprinted with permission: © Succession Marcel Duchamp/ ADAGP, Paris and DACS, London 2002.

Just as the production processes of the photograph lead to an 'imprinting' of reality, so might one argue that certain consumption

processes have a comparable effect. To repeat the simple example used earlier of the coffee mug, a mug may come to be associated with an individual through repeated use, even though there is nothing particularly distinctive about the mug itself. But it may be that visible traces, deep stains from many coffees, accumulate on the inner walls of the mug, indicating a long period of use, and perhaps by extension a certain seniority. Imagine also the tool of the apprentice (whether it be a carpenter, a builder, or archaeologist), fresh, shiny, 'green', in contrast to the tool of the expert, worn in the right places, with the patina of experience, of accumulated knowledge. Gell suggests something of the sort for Kula valuables too:

> An important arm-shell or necklace does not 'stand for' someone important, in a symbolic way; to all intents and purposes it is an important person in that age, influence and something like 'wisdom' inheres in its physical substance, in its smooth and patinated surfaces, just as they do in the mind and body of the man of renown to whom it was attached. (1998: 231)

The surfaces of the object receive physical imprints or traces from the activities in which they are caught up. Similar to the photographic imprint in this respect, these consumption traces nonetheless differ in not bearing a physical likeness to their referents: they are lacking the iconic element, and so are not composites. But could one perhaps apply here the argument put forward by Gell – that although the ambassador for China may not look like China, he may, in a diplomatic context, be an icon of China? Similarly, although coffee stains may not resemble coffee as such, in a particular context they may come to be seen as iconic (as well as indexical) of coffee (especially in the absence of coffee).

Although starting out with the assumption that icon and index are distinct sorts of sign, and that production and consumption are distinct sorts of activity, it emerges that they may be somewhat closer than originally assumed. These points have arisen through consideration of the nature of meaning in photography; we turn now to the second main area for discussion, skeuomorphism.

SKEUOMORPHISM

The separation between production and consumption is a theme that can be very usefully explored in the field of technological activity, i.e. the production and consumption of craft objects. Considering first production, the idea of a sign being *physically forced* to resemble its prototype is a powerful one, and has special relevance in certain areas of technological activity. A phenomenon sometimes observed amongst craft objects comes to mind: 'skeuomorphism'. This is 'the manufacture of vessels in one material intended to evoke the appearance of vessels

FIGURE 2 A Minoan metallicizing cup with miniature cups inside. Courtesy British School at Athens.

regularly made in another' (Vickers and Gill, 1994: 106). Vickers and Gill also suggest that one way to understand the nature of skeuomorphs is to liken them to footprints in the snow. As a footprint is, like a shadow, a good example of an indexical sign, the implication is that the skeuomorph refers indexically to the prototypical form it represents. This is perhaps surprising as the skeuomorph would appear to be a good example of a sign that is connected to its referent primarily through resemblance, i.e. iconicity. Is this another example of the composite of icon and index, as with the photograph? Or is the analogy drawn by Vickers and Gill inappropriate?

SKEUOMORPH PRODUCTION

A rich body of data on skeuomorphs can be found in the abundant and varied pottery assemblages of Minoan Crete, particularly during the middle Bronze Age (the 'Middle Minoan' period). Certain types of Middle Minoan pottery are imbued with features highly reminiscent of metal vessels, such as metallicizing rivets at the join between handle and body, thin strap handles, and lobed, 'crinkly' rims (Figure 2) (Cadogan, 1977–8). Not only are specific individual features imitated; whole vessels have been found to be precise copies of metal prototypes. For example, at the palatial site of Malia in east-central Crete was found a precise ceramic imitation of a silver kantharos from Gournia (Davis, 1977). But the resemblance between ceramic skeuomorph and metal original is not

the result of any 'photographic' or imprinting process. The link is iconic rather than indexical; the actual process of manufacture is in no way analogous. Whereas the metal vessel will have been 'beaten', the ceramic versions are made on the wheel.

Yet skeuomorphism does not always arise in this way. In some rare cases Minoan ceramics can be seen to imitate basketry, but in such instances the clay is *physically forced* to take the appearance of a basket because it is pressed into a mould bearing relief basket patterns (Figure 3) (Detournay et al., 1980). This ceramic mould was itself made by impressing a basket into it. Hence the process of manufacture itself is in large part responsible for the appearance of the vessel, and thus there is not just a physical resemblance but a causal connection. Moreover, the method of production is quite conspicuous in the product – the seams from the mould are still clearly visible on the exterior surfaces. This basket skeuomorph is thus akin to the photograph, operating as a composite of both index and icon. So with some skeuomorphs an indexical link is responsible for their creation, whilst with others, such as the metallicizing pottery described earlier, there is no such link. Thus the analogy made by Vickers and Gill with a footprint in the snow only holds true in some cases; indexicality in production is not a necessary condition of skeuomorphs.

SKEUOMORPH CONSUMPTION

Turning to consumption, what were skeuomorphs taken to represent in the course of use? In Minoan contexts it appears that elaborate and very rare silver cups were an index of an elite group's prestige and status, probably used in acts of conspicuous consumption such as public feasting (cf. Day and Wilson, 1998; Knappett, 2000). In the spatio-temporal absence of the elite group, the silver cup could be considered an icon of the group, since, in context, that is what the elite group 'looks like'. And what about a ceramic skeuomorph of that silver cup? It too is clearly trying to access the indexical status of the silver vessel through an exploitation of likeness and iconicity. Of course the degree to which the ceramic skeuomorph becomes an index depends in large part upon the degree

FIGURE 3 Base of a Minoan ceramic skeuomorph imitating a basket. Courtesy École Française d'Athènes.

of likeness, and hence consumption success is reliant upon the skill invested in production. Moreover, the prototypical act of consumption also needs to be skillfully mimicked. If the imitation is only partially successful, the skeuomorph is perhaps destined to become an index only of the *emulation* of elite status.

Gell's comments on 'sympathetic magic' are very pertinent to skeuomorphism. Sympathetic magic, which is usually contrasted to a 'contagious magic', that is, based on contact, exploits shared visual properties, so that if object A shares properties with object B, A has influence over B or vice versa. Sympathetic magic is based on imitation. The example used by Gell (1998: 99–104) to illustrate these two varieties is volt sorcery, the practice of inflicting harm on others via their images. A voodoo doll 'works' on the basis of a physical resemblance with the intended target: thus this is a case of sympathetic magic, as it uses imitation to exploit shared visual properties. Contagious magic on the other hand exploits actual physical contact with the target – exuviae such as hair or excreta may be used as a means of creating a direct and indexical link with the intended victim. On occasion, both iconic and indexical representations, both sympathetic and contagious magic, may be brought together to make the sorcery doubly effective (Gell, 1998: 103). Gell also cites M. Taussig (1993):

> I am particularly taken by [Frazer's] proposition that the principle underlying the imitative component of sympathetic magic is that 'the magician infers that he can produce any effect he desires merely by imitating it'.
>
> (Taussig, 1993, quoted in Gell, 1998: 99)

Can we then in some instances consider the 'skeuomorphing artisan' as a magician or sorcerer, as posited, for example, by Gell (1992)? By imitating a metal original, the artisan intends the ceramic imitation to have some influence over the metal original, and indeed over the whole elite network of which it is an index. The ceramic skeuomorph has some of the power of the voodoo doll: in both cases a magician employs skilful imitation to bend reality. Indeed, the skeuomorph is trying to be something that it isn't (as may be the case with the marionette – see later).

In terms of production, it was argued earlier that the basket skeuomorph and the metal skeuomorph were created under rather different conditions. It may well be that the same can be said of their consumption. The basket skeuomorph was produced in a mould, and this fact is perfectly conspicuous in the finished product. So there is a certain honesty to the product, akin to the honesty of the photograph: the way in which the world 'imprints itself on the photographic emulsion . . . [is a] quality of transfer or trace [that] gives to the photograph its documentary status, its undeniable veracity' (Krauss, 1985: 211–12). There is also the question of *why* the basket skeuomorph has been created.

Whereas the metal skeuomorph is clearly trying to access a high-status world, with silver and other metals being very rare and valuable, there is not such a sense of basketry being a particularly high value commodity (although due to poor preservation we know very little about Minoan baskets). There seems to be no particular agenda, no deception, and no sense that the innate honesty of the mould-making process was being 'magically' subverted.

Whilst the process of imprinting seen in the basket skeuomorphs from Minoan Crete, and indeed in much photography, is an 'honest' one, there is nonetheless scope for deception and trickery. Mention was made earlier of Duchamp's work *With My Tongue In My Cheek* in which the direct physical process of moulding has been playfully subverted. This subversion creates a tension in the work between honesty and deception. There is a similarly subversive feel to much of the work of Antony Gormley, another artist exploring the tensions that can arise in the process of moulding and imprinting. Whereas Duchamp only moulded a part of his face in plaster cast, Gormley takes casts of his entire body in various positions. He has many works of this nature, including *Three Ways: Mould, Hole and Passage*, recently exhibited in the Tate Modern (Figure 4), *Learning to See III* and *Lost Subject I* (Hutchinson et al., 2000:

FIGURE 4 Antony Gormley's *Three Ways: Mould, Hole and Passage (1981)*

32, 48–9). Gormley uses plaster-casts to make moulded lead sculptures of his own body that are to varying degrees 'honest' reproductions of his form. Invariably the figures announce the honesty of their mould-made creation through their conspicuous seam lines (as with the Minoan basket skeuomorph in fact). Yet they are not directly moulded from the human body proper, but from the outer surfaces of body plaster-casts; the plaster, which can itself be sculpted, smoothes the line of the body. In this regard the plaster layer is akin to a wetsuit, de-individuating the body to some degree. Even though an individual body is the starting point, a kind of collective figure is the result. Thus those works which seem to possess an almost photographic veracity, such as *Learning to See III*, are at the same time somewhat deceptive. With other Gormley moulded sculptures, though, the deception is much more apparent, as with, for example, *Tree* or *Field* (see Hutchinson et al., 2000: 66, 74–5). The tension between honesty and deception can be traced back to the ambiguous relationship between the icon and the index.

MARIONETTES

The processes by which marionettes have meaning and agency is a further case in point concerning the overlap between icon and index. The marionette, rather like a voodoo doll, bears a visual resemblance to that which it is meant to represent, and is thus iconic. Yet its movements are mechanically caused by the puppeteer, via a series of strings that are in general perfectly visible to the spectator. These strings are not unlike the seam lines on a mould-made object – they are an index of the essential honesty of the entity. The active-ness of the marionette is thus a result of both iconic and indexical representation. It is perhaps rather like the photograph, in being a composite of icon and index. Or, in terms of magic, one might say it combines in one artefact both sympathetic magic (visual resemblance to its referent) and contagious magic (contact with the puppeteer). If the strings are cut and the physical contact with the puppeteer stops, the marionette 'dies'. But not entirely – the iconic aspect remains, hinting at some remaining agency. This is perhaps why the myth of puppets coming to life by themselves has such enduring appeal and fascination.

A rather fantastical example from the world of cinema should serve to stretch this argument further. The scenario comes from the recent film *Being John Malkovich*, directed by Spike Jonze. An unemployed puppeteer discovers quite by accident a secret 'portal' that can take him literally inside the mind of John Malkovich, a movie actor, for 15 minutes. John Malkovich appears to be totally unaware of this until on one 'visit' the puppeteer (played by John Cusack) realizes he can, if he applies himself, actually influence John Malkovich's thoughts and actions. With each

visit he is increasingly able to impose his own agency. Eventually, John Malkovich's body becomes a vessel for the expression of someone else's agency – in other words, a marionette. But this marionette is less 'honest' than most because there are no strings testifying to the direct influence of an external agent. The question of 'veracity' is further complicated. The actions performed by Malkovich when 'possessed' are not a true index of Malkovich's agency, since this has been supplanted by the puppeteer. Yet although the original indexical link is severed, John Malkovich the icon remains. The switch from Malkovich as agent to Malkovich as object has left no visible effect. We can hardly consider the 'possessed' Malkovich as an iconic representation bearing a striking physical resemblance to the original referent, as they are one and the same. In this odd scenario, sign and referent are indistinguishable. This situation creates considerable potential for the subversion of meaning (ably exploited by the director Spike Jonze).

AND BACK TO 'NETWORKS' AND AGENCY

Although photographs, skeuomorphs, and marionettes are on the surface rather different objects, they nonetheless all involve a convergence of icon and index in the assemblage of agency and meaning. In each case there can exist a directness and 'honesty' in their creation. But at the same time this inherent truthfulness, arising from the productive process itself, can be subverted, resulting in a tension between honesty and deception. It is this tension that is at play in the work *Three Ways: Mould, Hole and Passage* of Antony Gormley and in the film *Being John Malkovich* by Spike Jonze. Photographs, skeuomorphs and marionettes are all social agents that hold the potential for playful deception. Is it for this that they are enchanting and magical (note how Gell (1988) creates a link between play and magic)? They all involve particular technological prowess. The skilled photographer, the skilled puppeteer and the skilled skeuomorphing artisan can all be considered as magicians, melding agency and object. Yet playful deception can turn into something more menacing, as in *Being John Malkovich* – the agency of objects, or even of agents when they are rendered object-like (as in instances of 'possession') is a powerful, and potentially dangerous, phenomenon.

Another key feature that unites each of these objects, and indeed all objects, is that they are nodes within *networks* that involve other 'non-human' entities as well as groups of human producers and of course consumers (cf. Bijker's bicycle example). Our cinematic example (*Being John Malkovich*) is again useful in conveying this point, that agency is distributed across a cultural network of artefacts and memory traces. Both inside and outside the film, John Malkovich, as a film icon, has his

personhood globally distributed, a network of traces, objects and memories which spread far, far beyond his own spatio-temporal coordinates. We the consumers are all invading this personhood, but at a distance. What the film does is simply make this 'invasion' or 'possession' more immediate by actually having agents physically access John Malkovich's head. In the film Malkovich's cry of despair that 'this is MY head!' is of course ironic: his head in physical terms one would normally expect to be off-limits, but in the metaphorical sense it has become a widely distributed network open to practically anyone.

CONCLUSIONS

Agency, far from being the preserve of the individual mind and body, is distributed across networks, networks that invariably include both humans and non-humans. These socio-technical networks are characterized more than anything else by the connections between the various nodes. But what are the processes whereby one node finds itself linked with another? In a world of interminable reference, an entity invariably comes to signal or be something beyond itself. In this article an attempt has been made to explore a few of the ways in which this referencing occurs, drawing upon the concepts of icon, index and symbol. The three seemingly disparate case studies that have been briefly discussed, namely photographs, skeuomorphs and marionettes, have enabled a fuller understanding of the nature of icons and indices, and their frequent convergence in networks of meaning.

Unless more questions are asked of the status of objects and agents and, more importantly, of agent-object hybrids, we run the risk of doing nothing more than scratching the surface of the unbelievably rich and varied textures of material culture. Far from receding in importance, such questions are set to become ever more central in human culture since, as we enter the 21st century, the zone between humans and non-humans emerges as much more of a bridge than a barrier.

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◆ **CARL KNAPPETT** studied Archaeology and Anthropology at St John's College, Cambridge, where he also went on to gain his PhD in Archaeology. He currently holds a Junior Research Fellowship at Christ's College, Cambridge. His research tackles meaning in material culture and technology, with a book on this subject in the pipeline. Minoan Crete is his principal area of specialism, with a focus on regional patterns of pottery production and consumption in their socio-political context. *Address*: Christ's College, Cambridge, CB2 3BU