
Chapter 8

Communities of Things and Objects: a Spatial Perspective

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The aim of this chapter is to explore some of the ways in which things inhabit space. The spatial scale in which I am primarily interested is the macro-scale, as there has been relatively little semiotic investigation of how things are interconnected across physical distance, for example in a geographical region. I shall argue that certain kinds of associations between things serve to bring them together relationally even when physically separate; that is to say, they are closely connected in cognitive space despite physical distance. In terms of ‘recasting the boundaries of the mind’, my intention, therefore, is to extend those boundaries considerably, in spatial terms.

But before proceeding any further, some attention must be devoted to this term ‘the cognitive life of things’, a recent addition to the language of archaeological theory and material culture studies. It is a variation on ‘the social life of things’, a term introduced into anthropology and archaeology two decades ago (Appadurai 1986), and still going strong in the form of biographical approaches to artefacts (e.g. Gosden & Marshall 1999; Jones 2002). By switching the word social for cognitive, with the other words in the phrase untouched, the effect in this volume is to create a strong focus on the cognitive, further underscored in the volume’s subtitle ‘recasting the boundaries of the mind’. While not the major theme of my paper, I would like here to focus attention briefly on the two words that might easily be overlooked: ‘life’ and ‘things’.

Starting with ‘life’, we need to question what understanding of this term is implied, and to what degree it usefully encapsulates the activeness of material culture. How can a thing have a cognitive life? How, indeed, can a thing have a social life? There are at least three main aspects in need of clarification. First, we might benefit from understanding life as a ‘biopsychosocial’ phenomenon (Maus 1950; Engel 1980; Pickel 2005). That is to say, life (or perhaps human life) is composed of biological, psychological and social dimensions, which we may alternatively describe in terms of animacy, agency and personhood

respectively (Knappett 2005). While these qualities overlap significantly, they are not altogether inseparable; for example, an individual’s psychological agency and social life might continue after biological death. This might occur through the extended nature of agency and personhood, in the sense that these qualities can operate beyond the confines of the individual — notably through material culture. This is our second key point: the concept of the extended organism/agent/person goes hand in hand with that of life as a biopsychosocial phenomenon. While this second point essentially concerns the spatial extent of life, our third point relates to the temporal unfolding of life: that there is an inevitable life-cycle, a kind of narrative or biography. Here too a social biography need not always map neatly onto a biological life-cycle; and by the same token an inanimate thing may be seen to have a biography, as its social context shifts over time.

Taking these three aspects into consideration, we can perhaps now see how it is feasible to describe a thing as having a social life. But a cognitive life? What might this entail? Surely it can only have meaning insofar as the thing is implicated in human cognitive tasks, as part of activities that are biopsychosocial, extended and temporal? ‘The cognitive life of things’ is perhaps then a corrective, rather like the term ‘material agency’ (Knappett & Malafouris 2008), designed to counteract the prevailing assumption that only humans have cognitive lives, or agency. By boldly stating that things might have cognitive lives, or indeed agency, the aim is ultimately to find a middle ground where it can be agreed that both humans and things participate in cognition/agency.

And still we have to take on this word ‘things’. It appears unproblematic, certainly much less so than ‘life’. Surely it is just a handy catch-all for the various entities with which the mind might engage, a relatively neutral term (Henare *et al.* 2007), at least when compared with ‘artefact’ (implying human intervention) or object (implying a perceiving subject)? Yet lately there have been moves to define ‘things’ more

carefully, in contradistinction to 'objects'. Gosden, for example, suggests that things are embedded in assemblages, and are inalienable and unquantifiable, whereas objects are disembedded, alienable and quantifiable (Gosden 2004, 38–9). Thus, in the production and use of material culture, there exist a whole series of interconnected processes that make it difficult to single out any individual item. In other words, we are habitually surrounded in our everyday lives by things. Yet, in certain circumstances, individual items may be singled out and displayed — whether in the museum, the shop or the home — and such items may qualify as objects, in Gosden's terms. Gosden is careful to point out that display is not necessarily a solely modern phenomenon, but may be identified in prehistoric contexts too, such as in the deliberate placement and display of bones and artefacts in British Neolithic tombs (Gosden 2004, 41).

This move is echoed in a growing literature in art history, literary criticism and cultural theory, in the shape of what Brown calls 'thing theory' (Brown 2001; 2003; Mitchell 2005; Schwenger 2006). Things are ambiguous and undefined; when you say 'pass me that green thing over there', the thing is unintelligible in some way. Objects, on the other hand, are named, understood and transparent. Objects might be pulled out of the miasma of thingness (through naming, for example). It is important to note that objecthood and thingness are relational registers, in that the status of the material entity is partly contingent upon the perceiver: a thing to one onlooker might be an object to another. For example, imagine looking out of the window on a train journey: everything you see may just merge together, unnamed (especially in an unknown landscape). What you see is thingness, one thing running into another in a constant flow. Another traveller in the next seat, however, might pick out known, named features and landmarks — objects, in other words. Alternatively, you may switch back and forth between different modes, either letting the landscape flow over and past you, or consciously picking out specific features as they zip by.

With the above example, the shift from one register to another, from thingness to objecthood, may occur quite suddenly, through a change of mood, or some external prompt. But there also exist various means by which this shift of register can be effected more consciously — Gosden discusses display, Mitchell covers images, and Schwenger the use of language, as processes for transforming things into objects. Indeed, Schwenger argues that we 'murder' things in naming them with words, and links this back to Heidegger's observation that, while we bring the unknowable thingness of 'x' into our domain through

naming and objectifying, we retain a sense of its unknowability (Schwenger 2006, 22–4). We can never fully grasp thingness. Also drawing on Heidegger, Wheeler (2005, 128ff.) differentiates two 'modes of encounter' between agent and world: 'readiness-to-hand' and 'presence-at-hand'. With the former, the material world has the property of thingness, while for the latter, entities are revealed as objects.

So the question arises whether we ought strictly to be talking about things or objects in the context of this volume. If things have distinct modes of encounter with agents, and if thingness is a certain kind of register of materiality, then what kind of cognitive life might a thing have? We must presume that the cognitive life of a thing will be very different to that of an object, although a single entity may move between these registers, and this may indeed form part of that entity's biography. Of course, there is no reason why we might not look at the cognitive lives of both things and objects as distinct modes of encounter, or at what occurs cognitively when an entity shifts from thing to object or vice versa. However, it may be that an unintentional bias resides in existing work; in investigating the *social* life of material culture, socio-anthropologists seem to have actually focused on 'things', i.e. embedded, inalienable entities (e.g. Hoskins 1998). Yet in work that has focused on the *cognitive* life of material culture, the emphasis appears to have fallen more on 'objects' — entities that have a clear functional role in a given task or set of tasks (e.g. Goodwin 1994; Hutchins 1995; Kirsh 1995; Susi & Ziemke 2001). That said, some of the objects in question — equipment in a kitchen, or navigational aids — may be seamlessly and smoothly integrated into the tasks at hand, and thus, in Heideggerian terms, be ready to hand rather than present at hand. Yet while such equipment might have the transparency of things in the midst of skilled action, their epistemic role is clear and nameable in these settings, ordered in space to enhance cognitive functionality (see Sterelny 2003, on artefacts and epistemic engineering). There is not much feeling for thingness in these cases, of stuff just being there, not fully perceived or understood. It is as if every entity around us in our material world can be precisely named and functionally ascribed. I am reminded of an epigraph used by Andy Clark at the beginning of chapter one of his 1997 book: 'Ninety percent of life is just being there' (Clark 1997, 9: the quote is attributed to Woody Allen).

Nevertheless, it is of interest that in the 'social life of things' tradition the focus tends to be on individual things — which is paradoxical, given that one of the features of things is that they are embedded. This embeddedness is certainly recognized and explored,

but does not often stretch to an examination of whole assemblages of things (see Riggins 1994 as an exception; also consider discussion of Perec's novel *Life: a User's Manual*, in Schwenger 2006, 99–115). On the other hand, the studies of the cognitive lives of objects do tend to deal with assemblages. Yet, the limitation here is that they do restrict themselves, largely, to the present and ready to hand, i.e. the immediate task setting. There is a particular spatial scale at which analysis appears to stop. My aim here, therefore, is to extend the spatial scale. This will involve consideration of greater numbers of entities, and entities that are not present or ready to hand (but which may nonetheless be *cognitively* present). In expanding the scale of analysis in this way, we will also have to assess whether non-present entities have the character of things or objects.

Direct and indirect perception

If in dealing with a particular activity setting we imagine that all relevant entities of the situation are present, then the agent can *directly* perceive the *affordances* of the situation (Gibson 1979). But what if some entities are not present, but are relevant to the situation and somehow co-presented or re-presented therein? These entities might thus come to mind, despite being physically distant; but then surely they can only be indirectly perceived?

How are we to cope with this analytically? Does it mean that we have to imagine two different kinds of perception in operation — direct and indirect? One example to help us think through this problem comes in the form of a simple litter bin (Palmer 1999, 409; Knappett 2005, 46; see Fig. 8.1). Given a certain task — the need to deposit some litter, a Coke can perhaps — the form on the right in the figure opposite seems to afford this action rather well. The litter-depositing agent interacts bodily with the litter bin in a direct way, with very little by way of 'signs' or associations to act as a guide. One might thus argue that there is little semiotic content to this engagement, at least as far as the principal protagonist is concerned; admittedly, an onlooker may very well see signification in this scene, interpreting the observed actions through numerous associations. But this is not to say that this scene only has meaning to the onlooker and not to the protagonist. One might suggest that the human agent has directly perceived the affordances of the litter bin. And Gibson would probably also suggest that it is this very engagement that constitutes the meaning of this artefact.

And yet, while agents may often engage with artefacts directly in this way, invariably there are also

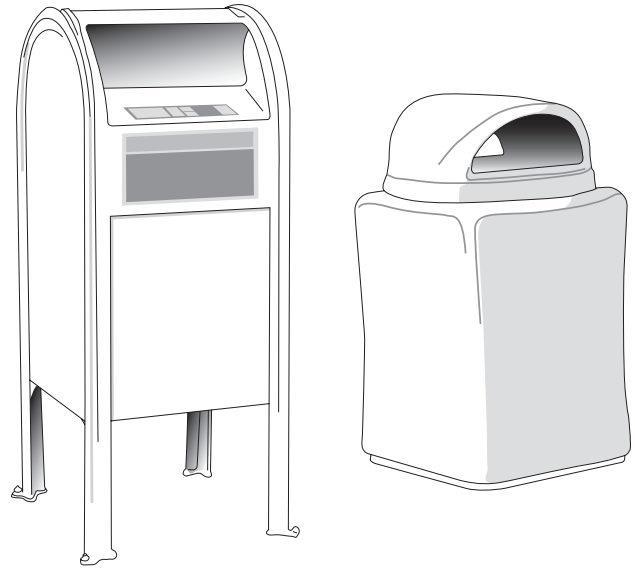


Figure 8.1. Mailbox and litterbin — similar affordances.

indirect associations impinging upon such material engagements. The receptacle on the left might also invite the deposition of litter in purely physical terms; yet the agent, on the whole, possesses cultural information as to the actual function of this form as a postbox. This understanding of function may not be accessible from its physical form alone, deriving instead from numerous associations held by the agent. Its function is thus in large part *indirectly* perceived, and thus, consciously or otherwise, one artefact does tend to lead onto another in networks of association.

However, this is not to suggest that an artefact necessarily stands for another in a conventional and rule-given way: this would be to confuse sign with symbol, and to follow the path of Saussurean semiotics and argue that artefactual semiosis operates like language. This approach has proven to be unsatisfactory as far as material culture is concerned, for which Peircean semiotics offers far more, with its tripartite scheme of icon, index and symbol. This scheme demonstrates the multitude of ways in which one artefact may represent or signal another — through 'iconic' similarity, 'indexical' contiguity or causality, or 'symbolic' convention. Portraits or dolls, for example, are signs that have an iconic resemblance to that which they represent. A pointing finger, a weathervane and a barometer are all indexical signs in which the relationship to the referent is one of contiguity and/or causality. And as for symbolic convention, the most obvious example is language, in which the word 'dog' signifies its referent through a formal, agreed-upon convention.

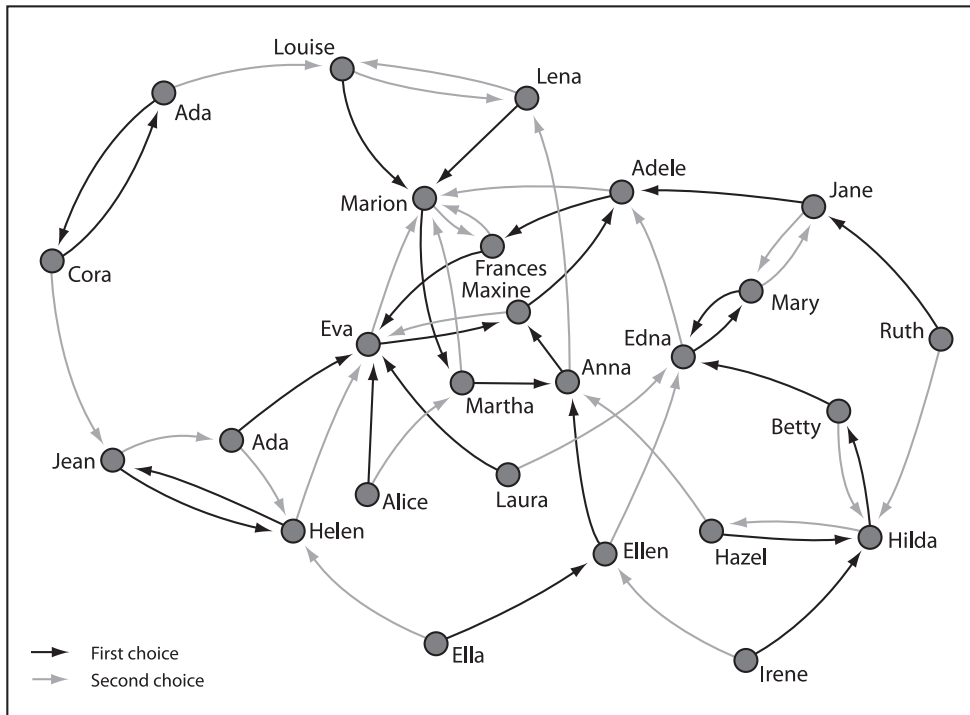


Figure 8.2. *A typical sociogram — a one-mode network.*

However, rather than maintain that such semi-otic associations are indirectly perceived, whereas affordances are perceived directly, there is perhaps scope for arguing that a single perceptual mode is in operation. This could be an important analytical step, and we are taken towards it by the recent work of Clarke (2005) and Windsor (2004), developed specifically in relation to musical meaning but with much wider ramifications. In what the latter characterizes as an ‘ecological’ approach to semiotics, an attempt is made to draw together semiotics and ecological psychology (see Keane 2003, for a broadly similar approach, if less explicitly stated). Windsor argues that signs can be considered from an ecological perspective as offering affordances. The agent will search the immediate ‘array’ for information, but if none is forthcoming, or if it is equivocal, the search can spread wider in space and time, beyond that which is immediate (Windsor 2004, 195). There may be a sign within the immediate array that appears to connect with a distant entity, but this need not, Windsor argues, signal a switch from direct to indirect perception. Within a modified theoretical position of this kind, which requires much fuller investigation, we can at least posit that the networks of association that radiate out from an object or thing, incorporating humans and non-humans in a web of connections, may in a sense

be *directly* perceived. According to the position of an entity within such dynamic networks, its meaning may shift even while its physical position or make-up remains unchanged. It is because of the spatial spread of these networks that I would like to use the term ‘community’ in relation to objects and things. This may seem to run the risk of having communities of objects or things which have their own life somehow irrespective of human intervention (in contrast to a term such as ‘agent-artefact space’: see Lane & Maxfield 1997). As I shall explain below, this is illusionary — humans are very much part and parcel of these communities.

Communities of objects/things

The idea of ‘community’ used in relation to material culture should be readily assimilated by archaeologists, because it tallies with a practice fundamental to the discipline — the creation of artefact typologies. There are numerous emblematic examples, from Bell Beakers to Samian ware (Gosden 2005, 207). However, such typological series are usually seen as rather descriptive and dehumanized. It is as if such communities have a life of their own, irrespective of the human communities of which they must have been a part. One might gain this impression also from some recent work in the anthropology of art, e.g. as shown

in the example of Maori meeting houses (Neich 1996; Gell 1998). Yet this impression can be corrected if we take some useful tips from the world of social network analysis, which engages in a similar kind of exercise but with individuals rather than artefacts. In Figure 8.2, we see what is referred to as a sociogram; this one shows interactions among 26 girls living in one dormitory at a New York state training school (de Nooy *et al.* 2005, 4, fig. 2). The interactions are specifically the first and second choices given by the girls when asked to name their favourite dining-table partners.

The sociogram in Figure 8.2 can be described as a one-mode network — all the nodes are of the same kind (i.e. they represent individual girls). But some one-mode networks are projected from two-mode networks, alternatively known as bipartite networks. In such networks, as one can see in Figure 8.3, there are two different kinds of node: *actors*, here depicted as circles, and *artefacts*, shown as squares. In such networks, nodes of a single kind cannot connect directly to one another, but only indirectly via the other node type (as shown in Fig. 8.3). This is the method that is used to construct affiliation networks, for example by Watts (2003). Actors become affiliated to one another through their shared practices, whether membership of a book club or a political party. One might very well consider communities of practice (Wenger 1998) in this light.

In Figure 8.3, below the two-mode network, we see the same represented as a one-mode network. The actors are now in the links between the artefacts, rather than being depicted as nodes. This could just as easily be drawn the other way round, with the actors as the nodes and the artefacts as the links. When we show a network of inter-artefactual relations in this way, it might seem as if the human agents are somehow missing, removed in some dehumanizing process. Yet they are very much present, residing in the connections of the network; it is just that we are not used to conceptualizing human presence as 'between-ness'. So when the idea of communities of objects/things is raised, the same process is at work. Vice versa, depicting only human agents in social networks presupposes some kind of artefactual domain located in their interconnections.

One might at this point usefully bring in ideas from Vygotsky and cultural psychology on the role of artefacts as 'pivots' in such interactions (Vygotsky 1978; Cole 1996; Wertsch 1998). But if our focus is to be on inter-artefactual relations and object/thing communities, then perhaps we can flip this and talk instead of human agents as pivots between material entities. This pivoting occurs in the course of action and perception; any connection that might develop

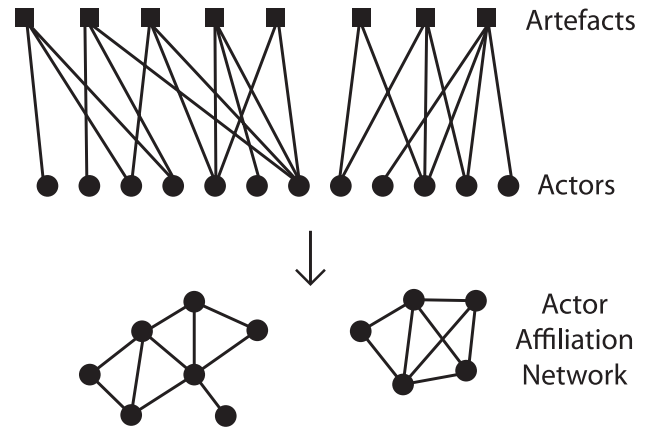


Figure 8.3. A two-mode affiliation network of artefacts and actors, projected to a one-mode network of actors.

between artefacts is channelled through the pivot of human perception. Crucially, there are various ways in which one artefact might be perceived to be connected to another — and this is where we can reintroduce Peircean semiotics. One artefact may be considered to be 'similar' to another (though vision, touch, smell, sound or taste). An artefact might also be perceived as contiguous with another, or to have been 'caused' by another (e.g. smoke and fire). There are also the conventional relationships between artefacts that underlie symbolism.

What I intend to argue here is that these relations vary widely in their *spatial* and *temporal* characteristics; this leads to artefact communities being constituted in quite different ways; and this ultimately implies that things and objects can have extremely variable social and cognitive lives as a result. I shall now discuss the spatial features of iconic and indexical relations in turn, before turning to those interesting cases where the two combine in icon-index composites. I shall then give some thought to the temporality of these relations, in terms of the horizontal and vertical transmission of knowledge (cf. Shennan 2002) and the different dynamics involved.

Iconic relations

Relationships of similarity between objects/things can be sustained over great physical distances — while close in cognitive space. The relational proximity that can be achieved cognitively (Amin & Cohendet 2004, 108–9), irrespective of spatial distance, can be thought of as a kind of virtual existence. We can see this in artefact communities where imitation occurs across large geographical distances. An example from anthropology might be that of sympathetic magic,

which works on the basis of iconic resemblance (Gell 1998, 99–101). Indeed, Gell also notes that stylistic linkages are not spatially limited. One might consider too a widespread stylistic koine whereby artefacts of very similar type occur over a large geographical region, seemingly sustained by low-frequency interactions (e.g. the Lapita culture in Oceania: Kirch 1997). The processes whereby similar traits are copied have been examined by Bentley and colleagues, both in the context of prehistoric pottery (e.g. Bentley & Shennan 2003), and in contemporary communities of practice, such as dog-owners (Herzog *et al.* 2004) and academics (Bentley 2006).

Indexical relations

Indexical relations have a quite different spatial logic — they do exist primarily in physical space. Relationships in physical space are the basis for relationships in cognitive space. One artefact may be associated with another thanks to its habitual proximity in action: a cup and saucer, a table and chair. In this sense, then, a table can come to ‘index’ a chair. Sets of artefacts arranged in a living room, for example, may come to acquire meanings through their physical juxtaposition (see Riggins 1994). But indexical relations can operate through causality as well as contiguity. For example, a footprint in the snow is an index of a foot because of a prior contiguity between the foot and the snow. Of course in this case the foot has also *caused* the footprint. A further relationship may be at work here because one might add that the footprint is more an index of a person than of a foot *per se*; the foot and footprint are in a part-to-whole relationship with the person. This is what one might in rhetoric refer to as synecdoche, but Sonesson (1989) dubs it ‘factorality’. Thus, in dealing with indexical signs one may need to take into account contiguity, causality and factorality. Turning briefly to anthropology, we see how all three come together in what has been called ‘contagious’ magic, which operates on the basis of an actual physical connection, a part of the victim’s body to be used — exuviae such as hair or nail clippings (Gell 1998). This form of magic can only work because of an actual physical relationship between sign and referent, quite unlike the ‘virtual’ imagistic relationship that lies behind sympathetic magic.

The physical relationship inherent within this form of semiosis implies, I think, a deeper level of investment, potentially creating more tightly bound communities of practice. In trying to characterize the kinds of communities involved, one might say that the links are likely to be high fidelity (and potentially low frequency), multidirectional and short distance

(see Knappett in press, for more on these terms). One might well think of local clubs or institutions that are based around close interactions in which something is learnt (boxing club; reading group). Membership of such communities may be far less faddish and less prone to rapid cascades of change than those sustained by iconic imagery.

The situation is inevitably more complex than this, no less than when these two forms of semiosis combine in what one might label ‘icon-index composites’. This is when a relationship of contiguity *produces* a relationship of similarity. This happens through physical processes such as imprinting or moulding. A prime example is the photograph. Other examples include some of the sculptural forms created by Antony Gormley; a work by Marcel Duchamp, *With my Tongue in my Cheek*; and some kinds of basket skeuomorphs (Knappett 2002). The resultant artefact communities have an intriguing logic to them that combines elements of the local and the indexical with the supra-local and the iconic, although this is not explored further here.

Temporal aspects: vertical and horizontal transmission

I have begun to hint at some of the temporal aspects of communities of practice sustained by iconicity and indexicality respectively as forms of semiosis. While spatial patterns are the main focus of this paper, the temporal dimension now receives some brief consideration.

Artefacts or aspects of artefacts that are easily imitated are prone to horizontal transmission — copying that can be achieved without any richly-textured, high-fidelity knowledge (Gosselain 2000; Shennan 2002; Bentley & Shennan 2003). It need not take much to achieve a reasonable iconic resemblance of an artefact. Styles can often, if not always, be rapidly assimilated and reproduced. Moreover, they have the capacity to transcend physical space, occupying instead what one might call a relational, cognitive space that is relatively easy to establish and then alter. This is perhaps why certain fads and fashions are prone to cascades: they are often iconic, and hence occupy time and space in a distinctive way.

But some artefacts and practices simply cannot spread like this. The communities of which they are a part are predicated upon contiguity (and causality/ factorality) in physical space. While some kinds of ‘knowledge’ can be acquired remotely, allowing a piece of the action, as it were, through images alone, other kinds of knowledge really require you to be there. You may be able to take part in certain commu-

nities of practice simply by sharing icons; and such communities can be constituted relationally rather than physically. But to take part in the local cycling club you really need to know how to cycle and to be able to participate bodily in this next to other cyclists. There is a degree of apprenticeship involved (you need your parents to be there holding the bicycle as you learn how to ride it — images alone are no stand in for this kind of material engagement, unable to provide the requisite ‘scaffolding’). This is what one might call ‘vertical’ transmission (Shennan 2002), and has a completely different dynamic of change to the horizontal transmission mentioned above. Physical contiguity is essential to the construction and sharing of cognitive space; assimilation and imitation is insufficient. Vertical transmission (underscored by indexical relations) tends not to be prone to rapid cascades of change in quite the same way as horizontal transmission (underscored by iconic relations). Hence, I would argue, quite distinct semiotic processes are implicated in different forms of cultural transmission, with varying rates of change. These are, however, ideas that require further development, which is beyond the scope of this paper.

Archaeological case study: Minoanization

I would now like to explore some of the above points on the space of objects and things, through a short case study taken from Aegean prehistory. ‘Minoanization’ describes processes of cultural transformation that occur in the south Aegean during the early to mid second millennium BC. Communities in the Cyclades, Dodecanese and coastal Asia Minor come under increasing influence from Minoan Crete, seen in various forms of material culture such as pottery, wall paintings and architecture. The exact nature of this influence is the subject of considerable debate, with scholars torn between colonization, acculturation and various permutations thereof (Broodbank 2004).

In terms of physical space, there does not seem to be a particularly predictable relationship between geographical distance and degree of influence; some sites at quite some physical distance seem relationally closer than others that are physically nearby. Moreover, not all aspects of material culture from site to site are equally open to Minoan influence: at one site (e.g. Akrotiri on Thera) there is innovative imitation of Minoan fine wares, while at another (e.g. Miletus, coastal Asia Minor), this does not appear to happen at all (Knappett & Nikolakopoulou 2005; Niemeier 2005). A third dimension of variability relates to the issues discussed above concerning the nature of the links in artefact communities in terms of frequency, fidelity,



Figure 8.4. Bridge-spouted jar with tortoise-shell ripple decoration; from Akrotiri, Thera.

directionality and distance. Let us now look at these, focusing in particular on material from Akrotiri, Thera (with thanks to Dr Irene Nikolakopoulou).

What we see is a twofold process — on the one hand there seems to be a move towards using assemblages of Cretan material culture, with drinking and pouring vessels to the fore like never before. However, most of these vessels are imported and not made locally. This kind of innovation may therefore have only required an iconic understanding of form and imagery, of the skeuomorphic metallicizing gestures being made by such forms. On the other hand, there is also a move towards local imitation, and even the first use of wheel technology for a restricted range of simple forms; this technology had been available on Crete for a couple of centuries (Knappett & Nikolakopoulou 2005). The imitation of decorative styles might have been quite rapidly achieved, although there are questions as to whether the local Cycladic potters would have had access to the necessary substances for the use of white paint, for example. Certainly, one kind of decoration, known as ‘tortoiseshell ripple’, seems to have caught on quickly (Fig. 8.4; Knappett & Nikolakopoulou 2008). This could, presumably, have simply been a matter of horizontal transmission, of straightforward copying from peer to peer. With the right substances, or even sometimes without them, iconic form can be quickly and easily imitated.

Another innovation, however, would not have been subject to quite such ready transmission — the use of the potter's wheel. This is the kind of technique that requires many years of apprenticeship to master (Roux & Corbetta 1990), and is generally transmitted vertically from one generation to the next (rather than peer to peer). It is unlikely that this feature of Cretan culture was simply observed from afar and copied; there must surely have been some level of contiguity, an indexical rather than an iconic relationship, in other words. Such knowledge transmitted in this way is less prone to rapid transmission and does have an unavoidable spatial logic to it. And it is interesting to observe in this context that over the course of the succeeding generations many potters on Thera clearly resist the wheel innovation, continuing to make their vessels with the traditional hand-building techniques. This is in sharp contrast to the communities of practice on Crete, where by this time just about every potter is evidently using the wheel (Knappett 1999).

Conclusions

It thus transpires that different artefacts and their associated practices come to inhabit space (and time) in quite distinct ways. I have argued here that there is a semiotic dimension to this, namely the distinction between iconic and indexical relations in terms of how artefacts are interconnected within communities of practice. Multiple relations of resemblance, contiguity, causality and factorality are dynamically constituted through time and space, providing communities with certain kinds of 'structure'. Iconic resemblance allows for links that can transcend geographical space, permitting what one might dub 'action at a distance'; these links are constituted relationally in cognitive space. Indexical links, however, including contiguity, causality and factorality, are more spatially limited: physical space is a basis for their constitution in cognitive space. Hence artefacts come to have different kinds of cognitive lives according to the nature of their interconnections in dynamic semiotic networks.

Can we link these observations to the distinction made earlier in the paper between objects and things? It may be that iconicity is somehow more objectifying than indexicality, which may allow us to associate the former with objecthood and the latter with thingness. This is very tentative and speculative, however. While we might expect thingness and objecthood to have different spatial and temporal dynamics, this requires much more research. Whether or not this distinction holds up, we can at least suggest that the cognitive lives of objects and things — at least when understood at a community rather than an individual level — do

not just unfold biographically over time, but also have an all-important *spatial* existence, both physically and relationally. Furthermore, I would argue that a focus on the cognitive life of things, and not just objects, would move us away from a solely functional approach in which material culture is viewed as an essential tool in cognitive scaffolding, epistemic engineering or niche construction (see Sterelny 2003). The more we do this, seeking to build on the groundbreaking work of Goodwin, Hutchins, Kirsh and Ziemke, among others, the better the chance of a richer perspective that incorporates the aesthetic and sensory otherness of things (see Gosden this volume).

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