So to write about materiality is (i) to attempt to develop a general theoretical and conceptual perspective or a theory of material culture in a material world; (ii) to consider the manner in which the materiality or properties of things, always in flux, are differentially experienced in different places and landscapes and social and historical contexts; (iii) to concern ourselves with the recursive relationship between people and things and the material world in which they are both embedded; and (iv) to address the affordances and constraints that things in relation to media such as the weather offer people and why some properties of things rather than others come to have significance in their lives. Ingold's consideration of materials thus forms an essential element in a much broader consideration of materiality in general.

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Materials with materiality? Carl Knappett

Many scholars working in the domain of material culture will welcome this forceful statement from Ingold, sharing his frustration with the seemingly immaterial materiality emergent in the material-culture literature, the singular focus on things already made rather than their processes of becoming, and the apparent lack of contribution from those who do study materials in depth (e.g. archaeologists) to questions of materiality and material culture. His intervention is a timely one, although the message has been expressed before, albeit in more muted tones (e.g. Ingold 2000, 53). But while Ingold may be justified in bemoaning the lack of definition and clarity in 'materiality', is there scope for stepping back from the polemic and finding a middle ground? I would argue that materiality may still be a useful way of understanding the conjunction or intersection of the social and the material, without the former swallowing the latter.

Latour vs. Lemonnier

The debate over materiality that Ingold launches here is reminiscent of the argument between Latour and Lemonnier over the agency of human and gun (Latour 1996; Lemonnier 1996). Latour sees the well-worn debate between the pro-gun and anti-gun lobbies as a dead end: it is neither the gun that makes the human act (materialist explanation) nor the human that decides and then acts with the gun (sociological explanation). Instead, he argues, the two bring each other forth. The active agent is neither human nor gun, but human-withgun, and any attempt at isolating either individual element is hopeless. This is, I would argue, the perspective endorsed in much of the current work on materiality. Artefacts may have material properties, but it makes little sense to study them in detail as they are secondary to the role of the artefact in social relations. Lemonnier, however, disagrees with Latour. Surely the gun has its own properties that can be assessed independently of the human, and

vice versa? Once these entities, material and social, have been 'independently' assessed, then one can analyse how the two elements come together. This approaches Ingold's position: all kinds of materials have properties that can be described independently of the particularities of a social context: bees secrete wax, which has properties, as do bird feathers and fish bones. So when Ingold asks us to touch the stone and feel its dampness, he is quite right to tell us that we are encountering a material rather than materiality. Well, yes, because in materiality there is the social, and this is a rather asocial, solitary experiment; and while the Gibsonian approach he propounds (i.e. medium, surface, substance) deserves full attention from students of material culture, it too is deeply asocial (as Ingold says, p. 6: 'Gibson downplays any notion of the materiality of the world'). Those who are trying to develop materiality as a concept are, I suspect, Latourian – they would not want to analyse the properties of materials independently (however much they might lose in the process).

Materials and materiality: in the field and the classroom

Touching the damp stone, and watching it change colour as it dries, is to understand something about a material rather than materiality. And this is a real problem that archaeologists frequently face, without perhaps realizing it. Let me give two examples. First, I started to read this paper while on fieldwork in Crete, sorting through many thousands of pottery sherds at the Bronze Age site of Palaikastro. The interaction with one class of material – ceramic – is quite intense, involving not only visual perception but also touch, and indeed sound (sherds of different qualities). One of my student assistants began one day a brief experiment in 'blind strewing' – sorting through the pottery spread out on large tables by touch and sound. This is a surprisingly worthwhile exercise. And I subsequently learnt that Molly Cotton, the pottery assistant of Mortimer Wheeler, always recommended strewing by touch rather than, or as much as, by sight (Sara Paton, personal communication). In this way one pays most attention to ware (through texture) and shape (one can distinguish bases, body and rims by touch), only considering decoration last. Second, I continued to read the paper once back in my department, while preparing for our first-year archaeology course on 'Materials'. The students, from the very first weeks of their degree, learn to handle, observe and describe a range of archaeological materials (and I should add that the bibliography is headed by Hodges's Artefacts, see Ingold p. 2). Yet in both instances, in the field and the classroom, it is very difficult to engage simultaneously with the inevitable social aspects of these materials. Someone made these pots, or knapped those flint artefacts, and many people may have used them over time in various social settings. This is what we should really be after as archaeologists (we are not material engineers, after all), and I often say that, contrary to expectations, I am not that interested in ceramics per se; all the more frustrating that the social component invariably seems intractable when one is deeply immersed in material study. A comment of Ingold's comes to mind in this context -'materials always and inevitably win out over materiality in the long term' (p. 10) – I take this to mean that the material is more durable than the social, and this is one of its 'properties'. And perhaps just as archaeologists find it difficult seeing through the material to the social, so it seems the ethnographer or sociologist struggles to see through the web of social relations to materials and their properties.

Material and social, material and mental

Keeping the social and material separate may provide analytical clarity, while the conjunction of the two implicit in the term 'materiality' is more realistic. We fall between these two poles when it comes to the material and the cognitive, too. Just as he is critical of materiality for being social but immaterial, so Ingold is critical of those mentalist accounts that consider the skilled craftsperson to have a mental plan of the artefact before execution. He cites Renfrew's recently developed notion of 'material engagement', in which this mental–material dualism is seemingly overcome. Yet Ingold remains unconvinced, for the engagement is still one between representations and materials, and 'does not bring the flesh and blood of human bodies into corporeal contact with materials of other kinds' (p. 3).

Ingold's perspective is oriented around practice. It is anti-representationalist, in the spirit of Gibson's ecological psychology. Meaning simply resides in the affordances of the medium, substances and surfaces of the world of materials; it does not hide behind them. The implication is that everything can be directly perceived. This is a controversial position. Are there not, after all, associations that go beyond the immediate world of materials; what of remembrance of past situations, or imagination of future ones? Is there no role for indirect perception? Ingold does not explicitly address this problem, but other scholars have recently made some interesting proposals. Working principally in the field of music and auditory perception, Windsor (2004) and Clarke (2005) have sought to get away from this entrenched division between two forms of perception, direct and indirect, arguing for an ecological approach to representation. It would be interesting to know what Ingold makes of their intriguing argument.

Flux and networks: spatio-temporal properties

Ingold turns his attention to another bugbear - 'agency' - perhaps as frequently used and abused as 'materiality'. He takes issue with the way it has come to be used as a 'magical mind-dust' (p. 12), sprinkled upon inert objects to bring them to life. This notion that agency is bestowed upon something follows an *animist* logic; another way of understanding is to follow a *fetishist* logic, whereby the object's power comes from within (Pels 1998). Although Ingold sees the latter logic as more satisfactory than the former, he finds both lacking in their focus on individual entities. The key, he suggests, is to restore things to the generative fluxes and circulatory flows of the world of materials ('Things are in life rather than...life in things', p. 13). This introduces, presumably, a spatial component to the world of materials, and I wonder if a concept such as that of the network might not be useful here, as a means of exploring these fluxes and flows more systematically across a range of spatial scales. Network thinking encourages a focus not only on entities but also on connections; with regard to agency, it should enable a relational perspective wherein the properties of materials can be seen to emerge rather than simply be. In that they may be dynamic and emergent, networks have a temporal as well as a spatial occurrence. As the network as a whole shifts and alters over time, so do the positions of each node within it. Ingold does mention that the properties of materials are experienced, and that in this sense each one is a condensed story, but does not develop the temporal or narrative dimension any further here. His closing line, that the properties of materials are not attributes, but histories, is therefore rather enticing, particularly to an archaeologist, and one wonders how Ingold might have taken this further. His emphasis on the coming into being of materials will be music to the ears of those who engage in experimental archaeology, as it hints at an often lacking philosophical background or framework to such study. There is considerable scope here for developing a narrative perspective on material properties. Perspectives from materiality have perhaps paid too little attention to time.

Materials with materiality

In encouraging us to take materials seriously, Ingold has provided a powerful corrective to what risks becoming an unhelpful bias in material-culture studies. But if the materiality perspective critiqued by Ingold has focused on social relations at the expense of material relations, then how is Ingold's 'world-of-materials' perspective going to avoid doing precisely the opposite? We may be provided with a fruitful means of looking at material relations, but what about social relations? As with Gibson, relations between people do not seem to feature that prominently. Just as in a materiality perspective the things become ciphers for social relations, so in an ecological approach the humans seem to take a back seat to the trajectories of materials. We need to find a way, surely, of combining the two; or, in other words, of following both Latour and Lemonnier. There is also, perhaps more importantly, a pressing need for systematic methodologies with which to study material culture in the past and the present, and the development of such methodologies might enable the different disciplines concerning themselves with material culture to communicate more effectively, with archaeologists engaging more fully with 'materiality' and anthropologists with 'materials'. Ingold, occupying a unique position between various disciplines, is well placed to identify these discrepancies, and his bold statement should serve as a wake-up call across the multi-field domain of material-culture studies.

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Stone age or plastic age? Daniel Miller

Ingold starts his critique with a claim to find recent writing and talking about material culture essentially obscure and orientated to fashion. If one reads Ingold's own writing you will find plenty of references to philosophical