# Weaving Baskets into (Im)Material Bits

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*Why should we start taking the (im)material seriously in HCI, and how can we start?*

We ask the above question not because we can answer it but because it appears to be of crucial significance to a number of research directions within contemporary HCI. As is the crux of this workshop, notions of craft are becoming increasingly relevant within the study of human relations with technology (Rosner and Taylor, 2011). Beyond this, there is increased attention to how ideas related to 'design in use' might play in an increased sense of participation with, and through, digital technologies (Ehn, 2008). Therefore, we appear to be in a period where users are becoming implicated as crafters of their own digital experiences, through their engagement with computationally augmented (im)material.

Material Engagement Theory (Renfrew, 2004; Knappett and Malafouris, 2008), or MET, is an approach within anthropology and archaeology that shifts the thinking about the generation and use of artefacts, from a human-model of agency to that of a distributed agency that emerges through the very forces and activity of material engagement. Here, a practitioner—whether it be sculptor, carver, painter or weaver—always operates within a field of forces set up through his or her engagement *with* the material world. Taking a position informed by MET requires us to rethink the basic conceptions of HCI, that is, **humans** and their **interactions** with **computers**. These are speculated below.

**human -** MET anthropologist Tim Ingold (2010) alerts us to how when weaving a basket the final form cannot be fully attributed to a design specification in the mind of the craftsperson before engaging with the material. The strands of material used to produce the basket – the warp and the weft –have tensions, resistances and forces of their own (Figure 1, left). When working with these the basket maker is working within a field of forces that are both internal and external to the material and the practitioner, which condition the activity of both. Whilst these forces are invisible, (im)material and non-formal, human beings are continually working with and against them as they create and experience digital systems.

**computer –** In theories of material engagement, the forces informing the creation of an artefact become embodied within them. In Gilles Deleuze's process philosophy—which influences contemporary MET—works of art were viewed not as a project of reproducing cultural symbols that are visible but rather as a way of rendering visible the experiential forces that structure it. For example, in Deleuze and Guattari's analysis of Millet's '*Peasant Women with Brushwood*' (Figure 1, right) 'what counts ... is not, for example, what a peasant is carrying, whether it is a sacred object or a sack of potatoes, but its exact weight' (Deleuze & Guatarri, 2004, p. 378). The argument here is that digital systems act as a form of expressing an empathetic engagement with an other, which is framed through inferences from the creator's/creators socially and environmentally embedded experience of a particular phenomena (such as weight).

**interaction -** The examples that MET provides to think about humans and computers also provide us with a way of conceptualizing interaction. Returning to the basket, when weaving, each layer of the weave is laid upon the one that was laid before, and provides the layer for

the next to be laid. As such, the interaction is dependent upon not only the experiential forces that structure the weave, but also the prior experiential forces that allow the current interaction to take place. As also seen within the painting example, the experiential forces that become embodied within a painting are experienced when they are beheld. These experiential forces become the ground for which a painting is interacted with. Therefore, interaction here is not a moment or series of sequential moments between an agent and artefact but extends through space and time and the inferred heritage of the interactions of others.
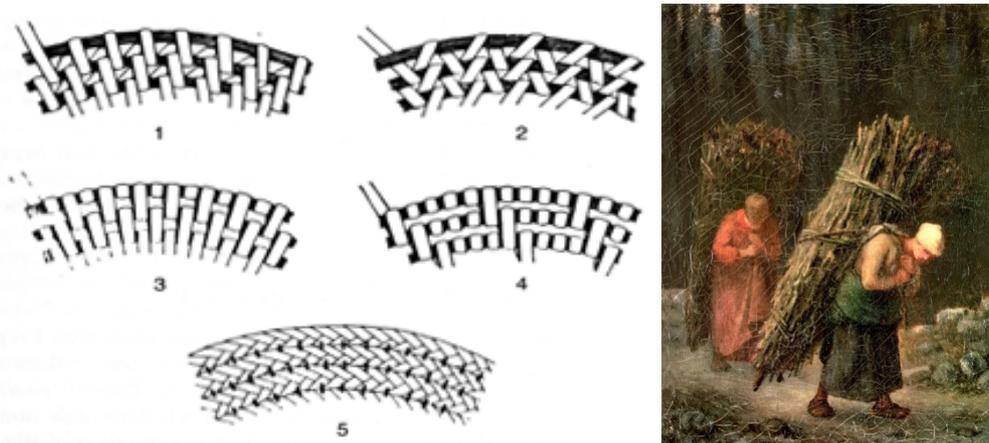


**Figure 1: Illustration of basket weaving process (left);** *Peasant Women with Brushwood*, **1858, Jean-Francois Millet (right).**

These brief interludes suggest that if we are to take the (im)materiality of digital bits seriously then the very notions of human, computer and interaction as they are commonly understood can be questioned. Whilst this may on the surface appear to be a primarily theoretical endeavour, this need not be the case. As per the MET argument, objects themselves act as utterances of the embodied, enacted experiences of those that create, perceive and act with/upon them. Such an archaeological approach to material culture treats that material culture (images, artefacts, user interfaces) as epistemologically and empirically viable within human experience—indeed the very argument is that images, artefacts and interfaces are an indivisible component of and for human experience. Therefore, this suggests that an archaeological approach to digital material can potentially reveal a lot more about the human interactions with technology than the current rhetoric of material and immaterial that surrounds HCI.

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