

## Making as a Way of Interacting with the Environment

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- (I) The flat and cold metal wheel is turning in front of me, but I'm looking at the lump of clay in my hand. Lifting my hand high, I bang the clay down in the centre of the flat turning surface – splash – excess clay splatters to the sides of the basin surrounding the wheel head. I dip both my hands in the water bucket next to me, it is cold and wet. I pull back my wet hands and place them on either side of the turning ball of clay. My hands slide easily over the irregular and jolting clay surface as I press my hands down on the clay, forcing it to stay in the middle and pushing it down. The clay stops jumping and moving under my hands and conforms kindly to the space between my fingers. The clay surface is running out of moisture and my hands are not slipping over the surface as easily as before; the sticky clay surface tries to catch my fingers in its muddy contact with me. I slowly ease the pressure and let go of the clay, just before getting sucked in and getting stuck. I lift my right hand, stretch out for a new ball of clay from the table next to me, and bang it down on the centred piece of clay turning in front of me. I wet my hands again and press down, merging the new jumping and jolting bit of clay with the quiet and calm clay that I tamed earlier. Slowly, I work through the little mountain of clay balls, and one by one, they are tamed and merged into one large centred mountain of clay on the turning wheel head. Soon I can start looking for a shape in this mountain.

### **Material Manipulation**

As craft practitioners, we interact closely and intimately with materials and tools. As we learn to listen to the voice of a material, to the possibilities and limitations it presents, we adjust our intentions to what is feasible in this human-material interaction. In this way, we learn to work with the material rather than forcing our will upon it. Through the years, a solid and deep experiential knowledge grows forth that becomes embodied in our souls, becomes part of who we are. When working with a natural material, such as clay, the source of the material may be present in the work presented, but also as an idea about connecting with the environment on a larger scale through the interactions with the material. Through craft practice, we have a direct channel for interacting with our environment, as what we make changes the material world concretely, even if in small ways. We are also changed ourselves as we reflect



(I) Centring clay on the wheel, piece by piece. Photo: Hanna-Kaisa Korolainen

and grow in this relationship. By paying attention to the material interactions we have, we may become aware of the dependency and responsibilities we have with materiality in general. Through the act of making, there is a possibility to become concretely aware of the nature of materiality and its relevance to us.

Craft practice can be an arena for such material interactions and may even subtly propose behavioural change towards more sustainable and respectful ways of handling materials and the environment. Perhaps this could even awaken a sense of *empathy* for the material?

Experiential knowledge of materials is built over years of continuous material interactions and explorations. This process is not reserved for craft practitioners; rather, it is a natural process that all of us engage in from the moment we are born. Our interaction with our environment teaches us our very fundamental skills of *being in the world*, from the ability to stand up and walk, to handling complex material processes in a skilful manner.

Environmental psychologist James Gibson describes the information pickup processes of organisms (human and animal) through the concept of affordance: 'The *affordances* of the environment are what it *offers* the animal, what it *provides* or *furnishes*, either for good or ill' (italics in the original).<sup>1</sup> Gibson's theory of affordances is important in relation to material manipulation because it explains how *meaning* is made in a direct and un-reflected manner by the sensory input we have from the environment, and it shows how material encounters invite us to act upon situations as they present themselves to us.

Now, in learning about a material's behaviour in relation to our actions with it, we experience the results of our actions and learn how to *re-act* according to what we have learned in previous encounters. Neuroscientists Riitta Hari and Miiamaaria Kujala explain how, through an *action-perception loop*, humans are constantly connected to their environment via their senses and the possible ways in which to act that define the individual-environment relationship.<sup>2</sup> Thus, they say, humans are active participants in their interactions with the environment: they search for information in the environment and are affected by it, but they themselves also affect the environment as they interact with it.<sup>3</sup>

In material manipulation, when the material properties are breached in some way, it is experienced as material resistance. In such cases we are challenged to rethink our behaviour and actions in order to find a way forward that the material affords. Through repeated interactions with our environment, we become more skilled at making sensory predictions of future interactions, for we learn what to expect and how we should prepare our actions next time we meet similar situations. This knowledge becomes 'embodied' in us, meaning that we are able to interact with the materials without having to reflect consciously over the actions we make. We thus learn to make even better predictions, and we develop our skills in relation to the material environment around us. Learning how to work with the material is a sign of developing expertise.

While the above explanation of an individual-environment relationship might be the end of the discussion, there is a difference in how this process is experienced

phenomenologically. The process of learning through interaction with a material is explained by practitioners as a *dialogical relationship*, in which the material affordances and resistances are experienced as *actions* from the part of the material. The material is sometimes even seen as an active participant in the making of an artefact. While this animated and poetic description cannot be accepted by the scientific community, the practitioners' *experiences* are real and thus the voicing of them is important in the creative community.

Theoreticians who are closely involved with craft processes also describe the interaction with materials as a fundamental *joining of forces*. Anthropologist Tim Ingold writes that the role of the artist and the skilled practitioner is to join with the forces and flows of their materials.<sup>4</sup> Ingold also suggests that when practitioners correspond with materials, they follow the material properties to let the final artefact emerge by 'redirecting their flow in the anticipation of what might emerge', rather than by imposing form on the material.<sup>5</sup>

- (II) As the clay mountain now turns before me, kindly and neatly centred, it offers many possibilities. All shapes possible may be found in this mountain of clay, as long as they are circular and hollow. I put my wet and cold hands on top of the clay and search for the middle, there I start pressing my thumbs firmly down into the belly of the clay. I ease my pressure slowly again to take some more water and drip some drops into the hole I made. I continue pressing down my hands and fists into the growing hole and convince the clay to move away from the passage of my hands. It is heavy and my back and belly muscles are strained as the stiff clay puts up resistance. When my hands are almost down in the base, I turn the direction of my pressure and start pushing the clay from the inside out towards the sides, making the hollow space wider and the walls thinner. Now that I have tamed the clay through centring it and conquering its inside, I put my hands on each side of the clay, pressing the clay walls from both the inside and outside to start the process of throwing up the walls. But wait... there's an irregularity in the clay wall... the clay is harder in one part than in the rest of the wall. One of the clay balls was harder than the others, I remember noticing that when I was centring the clay balls in the beginning. I thought it would blend out with the rest of the clay, but apparently there were some harder grains in the mixture. Now if I continue throwing the clay as planned, one side will move less than the other, it will be thicker and shorter while the other side grows thinner and taller. The lump of hard clay might also start wandering little by little inside the clay wall as it gets stuck in the pressure of my hands each time it passes between them... I thought I was in full control, but now the clay gets its revenge. I need to compensate for this new situation and adjust my hands to the stiff part of the clay, not to fail in my attempt to throw this clay in a balanced way, and find the shape that I'm happy with. I'm not alone in this process, it is

not just me here at the wheel: it is me, the clay and the wheel together. By becoming aware of this new situation, I change my disposition towards the material and I concretely realise my limitations.

### The Voice of the Material

Design researcher Bilge Aktaş describes her learning experience of felting with natural wool in an exposition article that displays images, drawings, diary notes and videos.<sup>6</sup> Through paying careful attention to the way the material behaves, she listens to the *voice of the material* and experiences the wool's properties and its reactions to her manipulation. She writes about the materials' 'agency', that is, how she experiences its behaviour during her interaction and learning process with it. She also visits a sheep farm in Turkey where she explores the origins of the natural materials she is using and spends time with traditional felt makers to learn the craft.

Aktaş draws on theories of material agency introduced by non-anthropocentrically inclined writers such as political theorist Jane Bennett, cognitive archaeologist Lambros Malafouris, art theorist Barbara Bolt and others.<sup>7</sup> 'Non-anthropocentric' means that rather than considering humanity as the starting point and centre of the world, human beings are seen as *part of the world*, together with animate and inanimate others, such as the material environment, flora and fauna.

In her book *Vibrant Matter*, Jane Bennett argues that even inanimate materials carry a vital energy that has the power to affect people. The idea here is not to argue for a material intentionality, or that materials have a will of their own and are thus able to act purposefully, but rather to point out the imbalance in how materials are treated by humans on a socio-political, ethical and even psychological level. Bennett's book also aims to reconnect humanity to our environmental dependency, as a reminder of how intimate our relationship to materiality is, and how dependent we really are on our material surrounding and our environment.

While acknowledging that material is not agentic in a scientific understanding, Lambros Malafouris argues for a *distributed agency*, where the material is an acting partner in the general flow of activities.<sup>8</sup> In this vein, he argues that human agency is not the *only* agent in the creation of, for example, a thrown pot, but that the properties of the clay and the movements of the throwing wheel also affect the cause of actions and the final outcome. Similarly, Barbara Bolt criticises the idea of the artist as someone who only uses materials as a means to an end.<sup>9</sup> She argues instead for the *acting ensemble* between the maker, the material and the tools, which leads to a relation of *co-emergence* whereby the art is brought into being.

The idea that materials are active collaborators in the creative process is not new within the community of craft practitioners, after all, it is not unusual to animate both the processes of making and the material itself. While it is clearly necessary to restrain some material forces in order to control the outcome of an artefact, a practitioner also know that the material sometimes offers new ideas,





(II) Centred clay ready to be thrown. Photo: Hanna-Kaisa Korolainen

solutions and directions to follow. This is only possible when the practitioner is sensitive and listens to the voice of the material.

Ingold writes: 'As the dancer thinks from the body, so the artisan thinks from materials.'<sup>10</sup> The practitioner's hands are also attributed an active role in the formation of thought, and thinking hands is not an unusual metaphorical notion in this context.<sup>11</sup> Artists and craft practitioners often use symbolic or associative language when describing their material engagement. The feeling of being in a dialogue, of talking to a material and listening to what it has to say, is a direct interpretation of the material engagement and the intuitive understanding of what the material will or will not comply with.

- (III) As I take care to adjust my hands and the pressure of my fingers to the harder lump in the clay wall, I also notice that the lump is drier than the rest of the clay and that I need to wet that part of the clay more in order not to get stuck with my fingers and risk accidentally pulling the whole lump away from the rest of the clay body. I run water from my fingers on to the clay wall and it pools inside the clay pot as it runs all the way down to the base. The progression of slowly pressing the clay walls up and making them thinner takes more time than usual, and the whole piece gets wetted down and the clay is sucking more water. The water quickly softens the clay and the whole piece gets soft and wobbly. The pot is quite large and the speed of the spinning wheel is starting to affect the balance of the pot that is getting weaker and weaker. I slow down the speed of the wheel before the centrifugal force starts pulling the sides of the pot outwards. I know in my hands that there are not many choices for action left for me now; the properties of the clay are determining every step from now on, and there is little I can do to change that. I feel a bit scared and not at all as determined as in the beginning of the process. I hope that if I'm nice and very, very, careful, the clay could give me one more try at affecting the shape of the pot. I slowly press my fingers on each side of the clay wall and pull my hands up from the base towards the top, little by little, in each turn the pot takes, knowing that I'm at the mercy of the clay and that this is my last action, the last thing I'm allowed to do with the clay this time.

### **In Dialogue with the Material**

While the word 'dialogue' is reserved for a conversation between two human beings who speak a common language, a craft practitioner engages in a non-linguistic dialogue with his or her material. This material dialogue, like any other, also involves negotiations of new meanings as well as emotions that are connected to the dialogical process. Philosopher Ingar Brinck and psychologist Vasudevi Reddy write about the emotional engagement that this type of dialogue with materials entails. They further claim that dialogue, whether verbal or nonverbal, constitutes a primary



(III) I can feel the limits of the clay with my hands. Photo: Hanna-Kaisa Korolainen



means for making sense of the world at large, animate and inanimate.<sup>12</sup> They thus connect the general sense-making that goes on between humans and their environment to meaning-making in which emotions play a vital part.<sup>13</sup> In their example they look closely into the dialogical relationship with clay because they consider clay the most approachable material as a conversational partner.<sup>14</sup> One reason for this, they say, is that the experience with clay includes a 'feeling of being in contact with the physical or "real" world, typifying the relation between human beings and their environment phenomenologically and metaphysically'.<sup>15</sup> Inasmuch as this intense engagement with a material encourages a dialogical rather than dominating relationship between self and material, the relationship nurtures respect and willingness to learn and to grow in understanding the material as well as to understand one's own place in relation to it.

- (IV) I had begun the whole process briskly, with a good spirit and a healthy self-esteem, thinking I mastered the process and the material. But the material told me off again. It put me in my place, and I had to adjust to the emerging situation, respecting the limitations that presented themselves to me, respecting the material resistance and changing my actions because of this new situation. I did manage though. After reaching the rim of the slowly turning, wet and wobbling clay pot, it was still standing up. But only just. It was still a beautiful shape, a little off centre, but the piece is quite large. It took so long to make it, to centre all that clay, to carefully pull it up despite its irregularities and to shape it while it was about to fall over from fatigue. I would have felt really disappointed had I failed. What a shame it would have been. Now I'm relieved, but drained. It was such an emotional roller-coaster, I was so scared to fail. My body is in pain, I didn't notice how I strained myself until now. I was so focused on the process that my body became my will, the clay, the movement, the water, all in one. Now I feel kind of empty... but full. I wonder if the clay is pleased?

### **Making as a Way of Interacting with the Environment**

Tim Ingold writes about the flow of materials as a constant process of becoming that allows us to join in the materials' ongoing formations.<sup>16</sup> By handling materials in a craft process, we become concretely aware that the materials came from somewhere, that they changed in our hands and that we leave them to have an afterlife. In my making process, I intervened in the clay's material passage – from the ground, through my hands and on towards a new life as an object that others might handle.

At the same time, the pot is a result of the moments of my interaction with the clay; it is the evidence of a sequence of time that passed. It is a memory for me, for I was there to experience it, but it also embodies the actions that led to its conception. These actions may be traced by others and felt in the body of other practitioners who, in their lives, have experienced similar interactions with clay. The artefact thus



(IV) The clay, thrown to its very limit. Photo: Hanna-Kaisa Korolainen

mirrors the movements of my hands and my strained muscles from the time of its conception; the wet surfaces might dry but the soft shapes stagnate into the form they were left in after my fingers let go of the clay surface.

As Ingold hints, the act of making is a process of growth, but not only in the sense that forms grow into being. For a craft practitioner, the process of interacting with a material is a personal process of growth, both physically and psychologically. Quite literally, we grow our understanding of the material properties, their affordances and limitations. But we also grow in our understanding of our own abilities and limitations in relation to materials in general and to material processes in other contexts.

In the process of interacting with materials, we come to respect them in a new way and see that we cannot force ourselves upon them in ways that the materials will not comply with. We become something more than we were, we 'become' with the piece as it grows out of the interaction. As Brinck and Reddy put it: 'There is something about the embodied experience of making pottery that calls forth an archetypical, primordial manner of being-in-the-world, of being there tout court, in the guise of a being-with-the-world, or rather, with-the-clay.'<sup>17</sup>

But should this becoming turn static? As we develop as persons and practitioners, we learn and acquire new skills with every piece we make. There is thus no finishing line, no end to how much we can develop. The same goes for the creative process; there is not really an end, there is just the moment when attention is turned from the previous artefact to the next. The crux is to stop in time, before the piece is overworked. When the piece is still in progress, there is a possibility for anything to happen, something unforeseen and new. When the piece is declared finished, it is as good as dead, the possibilities of growth are gone. From a practitioner's point of view, artefacts are signs of processes, on the way from something to somewhere. When the piece stagnates, the practitioner is already somewhere new.

Standing in front of the finished clay pot, I gently pull the handle of the throwing wheel and the wheel head starts turning again, first slowly then a bit faster. The wet wobbly clay seems surprised at the speed, as if saying:

— What are you doing? I'm not ready to move yet, I'm also tired. I want to be still or else I will fall over.

— I know, it is a bit sad to say goodbye, we only just met each other and in a way I would have loved to show you off to my friends. But on the other hand, we did get to meet and maybe that is what matters most? We could have parted after you were fired and glazed, you might have lived on for quite a while and you could have made someone else happy. But what if you broke and ended up in the dustbin? This way you can come alive again, another time.

And so, the clay walls collapse in the turning force of the wheel and the big soft clay pot is thrown down flat on the wheel head, and I stop the wheel

from turning. I lift off the heavy and soft clay in large chunks and scrape off the rest of it from the wheel and put it back into the plastic bag, to keep it wet, for another time.

### Seeing My Place in the World

Since natural materials are in a constant flow of passing from one form to another and from one time to another, we come to interact with them in a limited time and space. Accepting that we do not need to prolong this interaction unnecessarily means that we are also freed from taking responsibility for the material artefact. Letting go of artefacts, not having to own them, may be sad or even a bit painful, but on the other hand, it can also be a relief. In a similar way, we as humans are also here for a limited time, but the material artefacts that we leave behind will become the responsibility of generations to come.

The piece I just made was maybe impressive in size, but imperfect and in a way not very special. I prefer to make a new, better piece to keep. As a practitioner, I feel responsible for what I do with the material, what I cause and what is left in this process. By thinking that we can dictate the material, control it or that we should preserve all that we have built in it forever, we go against future generation's right to do the same – the world is already full, already quite used up. Interacting with materials can help us understand our place in the world as a minority, as visitors who stay here a much shorter time than the sand, the stones, the sky or even some of the trees. We can use this understanding about our responsibility towards materials in other contexts too, outside the studio doors, in our behaviour with everyday materials.<sup>18</sup>

In the process of manipulating materials, we learn to listen to their voices and engage in material dialogues. Through our experiential knowledge, we predict what the materials will comply with but also learn to be sensitive to the suggestions they offer. Through craft practice, we thus become concretely entangled in materiality to the point that the materials become embodied in us – our thinking and knowing are mediated through the tools and the artefacts.

Through this process, we can grow in our understanding of our relationship with materiality on a larger scale. By paying attention to the material interactions we have, we might learn to respect materials in a new way. By doing so, we might become aware of our dependency on the natural environment and our responsibilities in relation to it and thus level out the hierarchies between the human and the non-human. Material interaction, through craft practice, enable us to think differently about the material environment and our place in it.

The theoretical framework that this essay partly builds on has been developed in dialogue with Bilge Aktaş, with whom I developed the course Human-Material Interaction for the University Wide Art studies (UWAS) at Aalto University in Finland.



## Endnotes

- 1 James Gibson, *The Ecological Approach to Visual Perception* (New York: Psychology Press, 1986), 127.
- 2 Riitta Hari and Miiamaaria Kujala, 'Brain Basis of Human Social Interaction: From concepts to Brain Imaging'. *The American Physiological Society*. 89, no. 2 (2009), 453–79.
- 3 Ibid. 457.
- 4 Tim Ingold, 'Being Alive: Essays on Movement, Knowledge and Description', (London: Routledge, 2011), 213.
- 5 Ibid. (2011), 213.
- 6 Bilge Aktaş 'Using Wool's Agency to Design and Make Felted Artefacts', *Studies in Artistic Research/RUUKKU*, no. 10 (2019).
- 7 Jane Bennett, *Vibrant Matter: A Political Ecology of Things* (London: Duke University, 2010); Lambros Malafouris, 'At the Potter's Wheel: An Argument for Material Agency'. In *Material Agency: Towards a Non-Anthropocentric Approach*, eds Carl Knappett and Lambros Malafouris (New York: Springer, 2008); and Barbara Bolt, 'Material Thinking and the Agency of Matter', *Studies in Material Thinking*, 1, no. 1 (2007), 1–4.
- 8 Malafouris, *Material Agency*, 35.
- 9 Bolt, 'Material Thinking'.
- 10 Tim Ingold, 'Toward an ecology of Materials', *Annual Review of Anthropology*, no. 41 (2012), 437.
- 11 Pallasmaa, *The Thinking Hand*; Camilla Groth, 'Making Sense through Hands: Design and Craft Practice Analysed as Embodied Cognition'. PhD diss. Aalto University, Espoo, Finland (2017).
- 12 Ingar Brink and Vasudevi Reddy, 'Dialogue in the Making: Emotional Engagement with Materials', *Phenomenology and the Cognitive Sciences* (Netherlands: Springer, 2019), 20.
- 13 See also Mark Johnson, *The Meaning of the Body: Aesthetics of Human Understanding* (Chicago: Chicago University Press, 2007).
- 14 Brink and Reddy, *Dialogue in the Making*, 3.
- 15 Ibid. 6.
- 16 Ingold, *Toward an Ecology*.
- 17 Brinck and Reddy, *Dialogue in the Making*, 6.
- 18 see also Aktaş, and Groth (2020).

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