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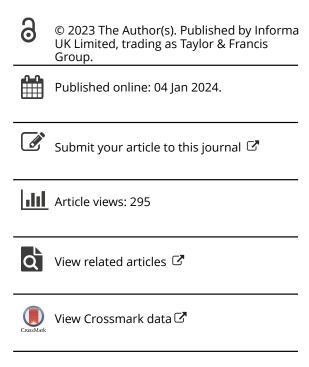
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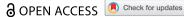
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"I'll Show You Differences": Skills, Creativity and Meaning

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ABSTRACT

This article arises out of critical contemplation of 'skills' in relation to Higher Education pedagogy as it relates to the Arts, Humanities and Social Sciences. As the emphasis on skills dominates more and more of the discourse about pedagogy in Higher Education, the article aims to make some critical comments about the reductionist approach to education that easily becomes part of skills discourse. In addition to criticising instrumentalist deployment of 'skills' in Higher Education policy, the article also considers the supposedly most 'radical' perspective on the idea of skill which is implicit in enactivists' accounts of the embedding of sensorimotor action in cognition. It is argued that such a perspective is undermined by its insistence on a model of direct human-environment interaction which brackets creativity, anticipation and the future. The article suggests that such a perspective would be illumined by dialogue with Ernst Bloch's concept of the 'not-yet'.

ARTICLE HISTORY

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KEYWORDS

Skills; not-yet; higher education; creativity; embodiment

This article arises out of our thinking about 'skills' in relation to Higher Education pedagogy as it relates to the Arts, Humanities and Social Sciences, about some research we conducted on the use made of close-reading approaches in higher education (Cobley and Siebers 2021), as well as to conceptual work on the nature of creativity (Siebers 2021). As the emphasis on skills dominates more and more of the discourse about pedagogy in higher education, we want to make some critical comments about the reductionist approach to education that easily becomes part of skills discourse. Partly this tendency may have to do with the fact that education for skills seems initially more measurable than other approaches that stress, for example, formation, knowledge, understanding, problem-solving ability or creativity. Skills can be more easily managed in an instrumental way than these other dimensions of education. Partly, there may also be a reductionist model of cognition and consciousness at work.

We will argue that – especially in educational policy – there is indeed often a confusion of 'skill' and 'creativity'. We will also note that accounts of embodied cognition tend to leave 'skill' undefined or take the word for granted. We will complement theories of embodied cognition with other perspectives, taken from biosemiotics and processual ontologies, to arrive at a more adequate understanding of creativity and its relation to skill. Our guiding question, therefore, is: how are creativity and skill related?

A first point to note is that it feels somewhat strained to call creativity a skill in the usual sense. We might speak of someone being skilled at a particular technique, craft or art, such as

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pottery, fishing or drawing. We might also speak of skill in the context of, for example, linguistic proficiency. Someone might be skilled at speaking this or that foreign language (or, indeed, [one of] their native language[s]). Someone might even be skilled at a particular artistic technique or form, such as oil painting or the sonnet. But all these skills do not capture the creativity that someone might also bring to bear on these pursuits, or the creative use someone might make of these techniques, crafts and skills. It is one thing to understand the form of the sonnet and be able to produce sonnets; it is quite another to do so creatively, originally, in other words in such a way that the form is pushed to its limit of expressive force or in such a way that the content of what is said encapsulates a thought or feeling that was never expressed in the same way before.

The conceptualisation of skills training presents its own difficulties, but here we will leave that topic and refer only to the repetition that is necessary for skills to become embedded in 'muscle memory', to become second nature. Instead, we will focus on the question what does it mean to teach (for unlocking) creativity? Can such an objective be conceptualised in terms of 'skill' at all? We might relate the difference between skills training and teaching for creativity with Freire's well-known distinction between teaching as 'banking', filling the empty minds of students with information and rote learning that they can then retrieve when needed and teaching as 'problem posing', an interpretive and creative process in which students and teachers work together to develop an understanding of the world and their place within it that is engaged, orientated towards transformation and liberation and that is always individualised and localised in terms of the personal histories and futures of the ones involved in the learning process (Freire 1968, 1992). Part of teaching-learning as problem posing is, to be sure, that students have access to certain skills. But in addition, the creativity that is central to the problem-posing approach requires a personal journey in which skill plays a role but skill alone is not enough. Moreover, even the concept of skill appears to extend beyond what can be grasped in the banking approach to education, an approach that defines so much of higher education teaching practices. Radical enactivism and distributed cognition perspectives have emphasised in recent years that skills are embodied and refer to a living, inhabited body which in some sense is experienced as an extended totality. The banking approach considers cognition merely from a mental perspective, thinking of skill along the lines of the analogy of computer program and a 'run' bottom. But also earlier, phenomenological approaches to skilled behaviour emphasise the parallel between inhabiting a body and inhabiting a skill (Merleau-Ponty 1945).

As an example of the banking approach in contemporary higher education, we might consider the language of 'apprenticeship' and 'apprentice', which is prevalent at least in British higher education, but is spreading also in other countries, such as The Netherlands. The word is used because it offers an easy and comforting link to employability and job prospects. An apprentice is someone who learns a trade from a master and can, upon completion of the training, apply the trade techniques themselves. But the reassuring embedding in trade traditions of gainful employment is bought at a high price. Essentially a concept of technical action upon the world that goes back to a static world and a static world image – that of pre-modern, medieval Europe – the apprenticeship model brackets out innovation and creativity and is not fit for purpose in the 21st century. Limiting learning to do things in a particular way, it does not teach what needs to be taught: the ability to unlearn to do things the way they have always been done and, from a comprehensive understanding of a particular field of human activity and its impact on the environment, innovate or create new, modified modes of operation. The apprentice is concerned only with the 'here and now', with masters who know what they are doing and inculcating apprentices with their ways. In contrast to the language of masters and apprentices stands the widely supported 4-C model of 21st-Century education, which emphasises communication, collaboration, critical thinking and creativity. Each of these four abilities transcend the apprenticeship model of learning because they all decontextualize in order to innovate and create, and they all require that the personal involvement of the student becomes an integral part of the learning process.

Let us consider an example from the world of education policy in more detail. In 2017 the British Academy, sponsored by the UK government, published The Right Skills: Celebrating Skills in the Arts, Humanities and Social Sciences. The report states: 'the arts, humanities and social sciences help us to understand ourselves, our society and our place in the world. They are vital to our ability to understand and learn from the past and analyse the present, in order to innovate and build for the future' (British Academy 2017, 9). The report then goes on to identify the 'skills' that enable this innovation to occur: the humanities and social sciences give their students skills of 'communication and collaboration', of 'research and analysis' and they foster 'attitudes and behaviours characterised by independence and adaptability', actualised for example in 'critical thinking and reflection on taken-for-granted "answers" to problems and value assumptions'. These core skills are complemented with more specific skills, belonging to the various disciplines within the arts, humanities and social sciences, such as language skills, numeracy, quantitative and qualitative analysis of data, data capturing and retrieval techniques and practical production skills. The latter examples seem to fit the notion of skills better than the former. The report then states: 'the arts, humanities and social sciences provide a particular context for the development of skills with an understanding of the human dimension in which they can be applied. AHSS students are able to use their skills in employment, research, education and broader social contexts in ways which are complementary to the skills and knowledge gained from other disciplines' (British Academy 2017, 10). Note how, here, the phrase 'an understanding of the human dimension' is contrasted with the notion of 'skill' and both are said to complement each other and create the precondition for using the typical skills of the arts, humanities and social sciences in employment and other academic and social contexts. The discourse that the report espouses deconstructs itself by the implicit acknowledgement that what is arguably the central goal of these disciplines, to understand (including to articulate and express) the human dimension of the world, is itself not a skill, but something else.

The concept of skill frames knowledge, understanding, reflection and awareness in an instrumental, not a critical and creative, way. But education as a liberator of people is a good, often posed as a goal in itself, and if it can be understood in instrumental categories, then those need to be more concerned with the long-term cognitive development of the species rather than with the short-term goals of just one sector of the contemporary social formation. The university is 'an autonomous institution at the heart of societies', whose 'research and teaching must be morally and intellectually independent of all political authority and economic power', 'in order to meet the needs of the world around it' (Bologna Declaration 1988, article 1). Without this it cannot act as a provider of education, a producer of knowledge and innovation and a space for inquiry, reflection and critique. Education also has to address the value-dimension: what is important, what is meaningful? An understanding of the human lifeworld and the ways we create, interpret, live with, challenge and transform meaning and the practices that house meaning, from language to social institutions, is itself not an instrumental undertaking and can therefore not be characterised with the conceptuality of skills. At the same time, it seems that students who have been taught to think in this way have much better prospects on the job market than those whose education has been limited to skills training and they even outperform, in some fast-growing sectors of the economy, STEM and health graduates (British Academy 2020). Here a persistent stratification of education along class lines proves very difficult to change; the fruits of a liberal arts education, either delivered at secondary school level or at tertiary level, are still often the silent differentiator in social achievement. If higher education pedagogy does not become more precise in how it conceptualises the different cognitive domains that it fosters, the primary effect of the skills agenda will be to create (or maintain) a bifurcation between those whose education will perhaps in name be centred around skills but who will also have that 'other' aspect, and those who will be confined to a narrow, incessantly practical and incomplete understanding of what higher education is for, with the concomitant lack of exposure to those modes of thought that stimulate creativity, imagination and innovation. The discourse of skills thus runs the risk of becoming an ideological loin cloth, in name furthering equality and societal relevance while in reality acting as an instrument to maintain existing inequalities and power dynamics.

Let us, therefore, look a little bit closer at the concept of 'skill'. It clearly seems to be a Germanic word. Still, we might think that 'skilled' has something to do with 'schooled' (Greek $\sigma\chi o\lambda\eta$ refers to the empty, shaded space outside the gymnasium where the rhetoricians used to offer lessons, and by extension a school is a free space where new skills can be acquired). But no: 'skill' is related to Dutch scheel and German schielen (squinting), Dutch verschil (difference): the root meaning is concerned with separating, dividing, cutting, differing and differentiating, with the power of discernment. The word is related to Old Norse skil, discernment or the ability to make distinctions. Its Proto-Germanic origin is *skaljo-, to divide or separate, which in turn is related to Swedish skäl, reason. The Proto-Indo-European root is *skel, to cut. In its etymological roots, the notion of skill includes more than the trained ability to carry out a technical sequence. Rather, that ability is grounded in the fundamental human cognitive capacity to tell this from that, to know one's way about a particular field of human activity and the differentiations at work within it.

When seen against this background, there is distinctly philosophical dimension to the notion of skill, at least in its etymological background. This dimension can be illustrated by a remark Wittgenstein made in conversation to Maurice Drury in 1948. Speaking about the *Philosophical Investigations*, a book concerned with distinctions in more ways than one, Wittgenstein commented: 'Hegel seems to me to be always wanting to say that things that look different are really the same. Whereas my interest is in showing that things which look the same are really different. I was thinking of using as a motto for my book a quotation from *King Lear*: "I'll show you differences"' (Drury 1996, 157).

The distinction between 'skill' and 'understanding' (and the distinction's ideological use in higher education pedagogy) might thus itself be based on a false difference, for understanding seems to underlie skill while skill is the heart of the process of understanding. How creativity fits into the picture is now an open question.

Without reducing a concept to its etymology, we do have a hint regarding the bearing of skill even as it has passed into demotic use. Contra some 'embodied' cognitive perspectives, 'skills' may be decisively *split* and not *at one* with the environment. Or maybe they split the environment, creating room for something new. The evolution of skilled behaviour was mediated by the freeing-up of affordances of material objects and sequences, which functioned as embodied modes of understanding, of seeing and making differences and of distinguishing oneself from one's present environment and its existing affordances: the process of learning. The differences that are involved in the acquisition and application of skills could even include those differences that separate what *was* from *what can be.* Is it not the case that imagining a different possibility from what is presently actual is a central form of 'showing you differences'? In a supremely well-written, justly praised and profusely-cited volume, Malafouris (2013) has presented a theory of how skill, understanding, imagination and material affordances work together in an embodied cognitive perspective (handuse, handling, manipulation) to enable learning, focusing discussion especially on early hominids who had not yet developed verbal communication. His presentation is persuasive, so we will quote from it quite liberally.

Proceeding with reference to 'externalism' in philosophy of mind debates, Malafouris (2013, 73–4) lays out the argument that the content of a mental state is in part determined by elements of the external world. As such, 'human cognitive skills cannot be studied independent of the external environment (social or technological)'. Indeed, Malafouris outlines a perspective of *active externalism* in which, say, marks made with a pen and paper are not so much an external record of the contents of mental states as, rather, *an extension* of those states. The book, effectively, celebrates instances of these extensions, from knapping to pottery, affirming a 'radical' unification of environment, body and cognition.

A flavour of Malafouris' stimulating analysis is offered by his discussion of a Linear B tablet as not simply 'an "external" amplifier or storage device that serves to lighten the internal cognitive load' of memory, but as a production

that brings about some radical changes in the nature of the cognitive operations involved and in the functional structure of the system as a whole (Norman 1988, 1991, 1993) ... a different set of skills and affordances is introduced, and those skills and affordances radically reconfigure the cognitive ecology and the dynamics (including boundaries and connectivity) of the Mycenaean memory field. As an implication of that, the individual using the tablets now engages in a different sort of cognitive behavior. A different cognitive operation – reading – now emerges and becomes available in the system. (Malafouris 2013, 81–2)

So far, so McLuhan, with Gibsonian overtones. There is also a passing affinity, here, with Bloch's contemplation of how new times and new spaces emerge in the 'not-yet', which we will revisit from a critical angle below. Ultimately, Malafouris (2013, 163–4) posits 'Material Engagement Theory' in which 'the material physical qualities of artifacts do not depend on mental states but rather constitute those states'. This is laudable in its protection against the 'sterile neurocentrism' that Malafouris (2013, 169) fears could threaten the archaeology of mind. Yet it would be a mistake to imagine that Material Engagement Theory settles the matter of skills.

Malafouris illustrates Material Engagement Theory, significantly, with the example of 'skilled rather than novice knappers' (2013, 166–7). The matter of acquiring skill, aside from the material engagement, is deliberately omitted, therefore, although the conscious choice seems to imply that they do have some origin, possibly aside from the impingement of the environment on motor activity. The project is to re-locate engagement and, by association, skill, from the cerebral to another bodily area – although we should note that the cerebellum is still a part of the body, even in demotic use. He writes (2013, 174),

in an important sense, one could argue, then, that the central executive for early humans is not to be found at pre-frontal areas of the hominin brain, but at the power grip and morphology of the hominin hand. In the absence of syntactic language and recursiveness (Corballis 2011), the locus of early human thought stays with the body rather than within the body; it is handmade. The tool guides the grip, the grip shapes the hand, for the hand makes the tool, and engaging the tool shapes the mind. When it comes to tool making and tool using, it is not appropriate to see the brain as the executive controller for embodied activity; rather, it is the other way around.

Malafouris adds that this 'enactive sensorimotor account' also ... enables us to understand seeing and perceiving as a form of 'skillful interactive engagement', as a form of acting in the world rather than as a form of representing the world" (2013, 203). The target, here, is the assumption that hominids in the Paleolithic world – or anywhere else – might harbour representations prior to engagement with the environment. However, in moving the focus back to the haptic, such argumentation overlooks its own role in favouring one part of a pendulum's trajectory.

The Gibsonian dimension in Malafouris' argument develops in relation to the potter's interaction with clay. He describes the sequence of events as follows (2013, 213):

our working hypothesis would be that first the hand grasps the clay in the way the clay affords to be grasped, then the action becomes skill, skill selects and effects results, and creative agency emerges from the results that matter.

This challenges (2013, 217) the idea that 'that the potter knows that he possesses the requisite knowledge, skills and technical means before the action itself, and, on the other hand, that the potter is ready to project or otherwise use this self-as-agent knowledge or component of his acquired personal identity to fill in or interpret the grey zones in the phenomenal experience of action. In this passage, then, Malafouris anticipates part of the line of argument that we have pursued in the present article, particularly in the examples of skills that we give below. Indeed, he presciently states (2013, 209) that there may be the objection, as we have partly raised, 'that all these questions have little to do with agency, action, and creativity as such, and that instead they relate primarily to embodied sensorimotor control, tacit knowledge, and practical skill'. However, that anticipation is somewhat of an over-egged pudding in its insistence that 'in the case of embodied skill, explicit representational thinking and verbal description are not needed and can hardly capture the phenomenological perturbations of real activity or the reciprocality between the crafted and the

crafter ... ' (2013, 209). Notwithstanding that the processual ontologies perspective from which we argue has nothing to do with positing the kind of anterior representational thinking and verbal description that so much of 'radical' enactivist posturing targets; rather, it is concerned with those differences that separate what was from what can be. Knowing-how means discovering-how through the affordance of embodied action; there is as yet no knowing-that, or representation, operative in the development of the skilled activity. The potter literally feels their way into the new. Here we see that Malafouris is aware of the need to link embodied skill development to differentiation, albeit without a representative component, and to creativity - but the creativity receives no explanation and simply 'emerges'.

In short, 'skill' is used in a number of places and ways in Malafouris (2013). Sometimes it is used to refer to the straw man of a neuro-centric perspective, sometimes to refer to embodiment, sometimes as subordinate to affordances. Tellingly, it is not defined. It is assumed that it is wholly unconnected with any imaginative faculty among humans or any conceptual activity. 'Skill' therefore becomes something of a shibboleth, curiously not subject to the linguistic hygiene that besets the rest of the field of philosophy of mind. The vagueness of conceptual metaphor controls the use of 'skill'. Could this be a trace of an ideological component in philosophy of mind or, more broadly, the whole of cognitive science whose chief purpose would then appear to be to promote a functional/instrumental view of human behaviour and experience? That may be going too far. However, as with any investigation of efficiency in the sphere of human activity, a reluctance to embrace errors, miscommunication and noise is usually indicative of the shortcomings of a functionalist perspective.

Our purpose in the current article is to read differently the vaqueness of the term 'skill' and explore its connection with understanding via the notion of creativity, the imagination and bringingabout of the new. Imagination, anticipation and creativity are at the heart of the unity of skill and understanding and thus should also be at the heart of higher education pedagogy in the Arts, Humanities and Social Sciences.

Can we theorize or conceptualize the connectedness of skill, understanding and creativity? Consider other examples: reading, driving, skiing, making music, acquiring a second language, working on a recycling line. Consider, too, how these occur when acquired as an adult rather than in the quasi-mystical instance of 'skill' as somehow seemingly immanent to any organismenvironment bond. All of these skills can only be acquired with an active anticipatory dimension. Trying to learn how to play a musical instrument or a second language in later life is a struggle: it requires practice, it requires thought, it requires theoretical contemplation, it requires consideration of the relations of the object of the skill to other things, it often requires a considerable amount of unlearning and it also requires creativity. Alternatively, think of the role of a goalkeeper in the team dominating a one-sided football match: there may be a great deal of monotony involved for the goalie - but alertness and anticipation is at all times required. The goalkeeper will get exhausted quickly, like someone on a production line who only has to be alert in case something goes wrong. Additionally, consider examples where skills are not just invested in an individual but distributed across a collective. There, one can witness similar imperatives. In the one-sided football match, the outfield players are engaged in keeping possession of the ball, tiring their opponents who are unable to overturn their lead, especially re-playing moves practiced ad infinitum on the training ground, carrying some awareness of paradigm games – possibly ones in which they were involved – featuring the shocking loss of a commanding lead, retaining alertness particularly in relation to their teammates and the respective spaces (bodily extensions) that they occupy and advance, certainly experiencing those players and spaces as an extension of their own body and position (until they make an error of judgment or motor control allowing an interception). Of course, this example of collective skilled activity is particularly skewed because football matches at the highest level are indubitably the product of training regimes. So, consider, instead, spontaneous skilled activity. A fastmoving fire at a cherished community facility or at a crucial civic edifice or at a building housing many adults or children from the community incites immediate action by the remaining community members who are aware that a fire service strike and a collapsed bridge will impede and, possibly,

terminally delay the arrival of the professional firefighters. Seemingly in an unskilled activity, the community members rapidly set up a bucket chain from the nearest water supply, in as direct a line as possible, to the heart of the fire. This involves, chiefly, co-ordination of the passing of each bucket of water from one person to another with maximum speed and minimum spillage, establishing routine which needs to be seamless in the face of great urgency and desperation. The initial set-up and co-ordinated agreement on the bucket chain involve creativity, obviously. Yet the entire process involves, at least, a consideration of the object of the activity (hence the urgency), what has precipitated it, what the hopeful outcome will be, what motor activity is required for movement of a range of different kinds of buckets with marginally different amounts of water in them, relation to the space of bodies on either side of each participant in the chain and, possibly, some cognizance of the progress of the fire and the extinguishing operation. What do these examples tell us about the role of conceptual activity, imagination and anticipation in skilled activity?

Pace Malafouris, it seems that we need to find a way to connect embodied cognition with imagination or conceptual activity in order to see how creativity is an intrinsic component of the skill-understanding complex. Interestingly, the work of Ernst Bloch, the philosopher who developed an intricate understanding of not-yet being in which creativity and the new play a central role, explored this connection in an early and dense essay, published in 1922, titled 'On Motor-Mystical Knowledge in Cognition' (Bloch (1922 1978)). Two excerpts from it will make clear that the writing here is very dense and philosophical rather than the kind of expression that is found in fields investigating cognition or psychology, even though Bloch was one of Wundt's students for a while. They will also make it clear how we might begin to think of creativity in this context. For Bloch, motor movement (voluntary bodily movement) requires as its complement an intention or intuition, which he calls 'mystical', of 'the dream that is present in the head of each object, the as-yet unconscious content, the deepest unconstructable self-problem at the core of each object' (Bloch (1922 1978), 114). For human existence the world is radically unfinished and this awareness permeates even our most potentially routinized modes of being and acting in the world (such as crafting ceramics). Without this 'mystical intention' no actions could be projected meaningfully into the future. Even a squirrel burying an acorn in the forest has a motor-mystical experience of some sort that pervades and directs every fibre of his body as it finds it way on the soil, amid the trunks and branches of approaching winter. If Bloch is right, this requires us to rethink and extend the concept of (embodied, distributed) skill to include an original creativity, not simply as something that escapes common notions of skilled actions, but as something that is necessary to make sense of the very notion of skill itself. Is the spider skilled at weaving its web? If so, then only in this expanded sense of skill. Does the spider, like us, live in an unfinished, open world? While we cannot enter here into a discussion of the historical context of Bloch's writing, it is perhaps useful to draw one contrast: namely with Heidegger's analysis of the world of the animals as closed and poor in his 1929/1930 lectures on the fundamental concepts of metaphysics, where, over several pages, he interprets the world of the bees as one that is destined to remain within its own boundaries of hive, flower and honey, without ever experiencing the boundaries as such and also without ever experiencing the hive as hive, the flower as flower, the honey as honey – or indeed the bee as bee (Heidegger 1995). In other words, the world of the bees is one of mere Malafourian skill, unrepresented differentiation and the complete absence of an openness towards the new and the sphere of possibility beyond the immediate environment, modal ontology, creativity, representation and imagination that this implies. It is a mindless world. Such a way of thinking, more common than we might perhaps think, falls within the unreformed differentiation of skill and understanding that we started with. There is here no room, nor need, for creativity. A world that is committed to keeping drones in their God-given place, private vice and public virtue included, had better read up on Heidegger. But we envisage a different possibility, one in which the distinction between human and other animals cannot be drawn along the lines of a limited or open notion of world, but has to be drawn along the spectrum of degrees of creativity and its conscious appropriation.



Let us listen to Bloch:

Just as motor intentionality introduced a *new time*, our rhythm, into the process, so mystical intention, this remembrance within the accelerating will-to-come-along, is aimed at making its objects depend on the deciding, value-philosophical I, and so, by this, it brings a *new space*, as an essential creation of categories, another mode of togetherness, [and] an abrogated, in all directions collapsed and torn open, categorical- and sphere order of the unfinished world, to be concluded finally by philosophy. (Bloch (1922 1978), 114, our translation)

The embodied, imaginative orientation of the body and its 'l' in activity (new time) creates a mode of togetherness ('world') that is a 'collapsed and open' tentative sphere of the creation of categories (differentiations), a new space, which is the space of not-yet being, the imagined, that provides the spirit, 'the dream that is present in the head of each object' and which finds its completion, as far as our experience goes, in the philosophical horizon of consciousness. Philosophy now becomes the compass for the actualization and recognition, not just of the human sphere, but of all of nature, a remark that will not have been too alienating for many of Bloch's readers, for whom Schelling's anthropic remark avant-la-lette that 'in humanity, nature opens its eyes and sees itself' will have been familiar. If we take Bloch's idea to its full implications, we salvage the idea but discard the anthropocentrism in it and would rather say that the squirrel philosophizes as it skillfully digs up its acorn, than that we fulfill the squirrel's call to be. If skill is the ability to discern and bring differences into account, to split open our world, anticipation, creativity, a radically non-routine dimension seems to be living at the core of all skilled engagement with the environment. This is the case even for the squirrel who had buried and dug up countless acorns as well as the potter who feels her way for the hundredth time through a lump of rotating clay.

A more classic and perhaps conceptually less costly way of including creativity and anticipation in the skill-understanding complex, one that departs from Malafouris while remaining within the broad categories laid out by Heidegger, can be found in the work of Van Heusden. Entirely in line with the idea that the human being has access to an open world because of our linguistic capacity, while other animals remain trapped in their environments like an official in a uniform, he writes: 'a theory of culture as learned behaviour fails to explain the two related peculiarities of human culture: interpretation and creativity' (Van Heusden 2011, 120). For these to be possible, we need differences – and differences require access to a notion of negation, which is given in the idea of double processing: absence + presence = difference. It is easy to see that memory is an absolute prerequisite, though not a sufficient condition, for the perception of difference to arise. Difference 'frees us from immediacy and the continuous "here and now" in which most (or all) other organisms live' (Van Heusden 2011, 121). The same goes for creativity and anticipation: 'the worlds which we construct in our imagination allowed us to cope with change in a more sophisticated way than other organisms do – it doesn't take long to figure out the profit' (121).

We live in the here and now, argues Van Heusden, but our grasp of imagined possibilities allows us to become superior problem-solvers, to deal with the challenges our world, and our actions, throw up: the here and now is the realm of deviancy, improvisation and body-environment coupling. Via the future and the past, always imagined, we actualize these dimensions of the here and now:

Human culture is [...] a cognitive process in which more or less stable memories are used to deal with the difference that the world forces upon us. The here and now presents itself as a deviance, a new and unknown combination of available patterns. It is this deviance that offers a certain freedom insofar that it calls for images that can be 'grasped'. Thus the miracle of the creative image, of the metaphor and the model come about. First, there must be a situation, or occurrence, that doesn't match a stable sign. To get hold of the difference, we search for other memories – other signs. Thus, for example, there is a face, and it has wrinkles, yes, but what more does it remind me of? Parchment, or maybe an old apple or cloth, or an arid landscape, cut through by deep canyons. The image that 'fits' the new situation best solves the problem created by the difference in perception. This image was not there in the first place, but came along, as an answer to the question: what is it that I perceive, how should I deal with this difference? The 'blend' created by the new image is not the problem but, rather, its solution. (Van Heusden 2011, 126)

Yet we immediately grasp how far this account of creativity is removed from the one that is at work in Bloch's thinking. For there is here only extension of categories by similitude, the attempt, often successful and sometimes not, of encapsulating the new and unknown into the known. There is unlearning what you have learned here, no expecting of or hoping for the unexpected or unhoped-for, in Heraclitus' remarkable formulation, without which the new cannot arrive (fragment 22B18). Van Heusden asks what something reminds us of. The re-minding already indicates that we are not here dealing with the motor-mystical intention that Bloch seeks to sensitize us to.

And yet, the idea that even in skilled routine we can, and often are, lifted out of ourselves to discover unthought-of – unheard-of possibilities for connection beyond the framings of the world as we know it - abound in human experience and culture, including popular culture and Hollywood cinema. In the pottery scene in Ghost (1990), Patrick Swayze and Demi Moore discover the romantic and erotic potential of shared pottering in which feeling one's way through the clay as a delicate shape emerges acquires an entirely new meaning. The activity is still what it was: turning a vase out of clay, but it has become so much more – not just an embodied cognition but an embodied soul contact, we might say a literal heart-to-heart, connoting all dimensions of love, from shyness and trepidation to messing about to faithfulness and protecting and nurturing what is vulnerable. The accompanying soundtrack, the Righteous Brothers' 'Unchained Melody', only serves to underscore the realization that we are in the presence of the truly new, free and creative here.

While not suggesting that pottery classes and, especially, pottery contests on reality television, will fill the gap of our ailing, skills-obsessed higher education pedagogy, we have hopefully suggested more subtle ways of thinking about education, skills, understanding and creativity. Partly we have drawn on embodied, enactivist approaches to cognition; partly we have shown why these approaches might also be said to suffer from a reductionist view of creativity, while creativity, or so we have argued, is needed for a more adequate conceptualization of both skill and the activity of understanding or interpreting.

David Bohm was well aware of the fundamental nature of creativity, of the impossibility of straightforwardly teaching it, but also of the necessity to guide people to it through education, the kind that does not treat creativity as a skill but that communicates an experience of it. Bohm writes:

But after all, for thousands of years, people have been led to believe that anything and everything can be obtained if only one has the right techniques and methods. What is needed is to be aware of the ease with which the mind slips comfortably back into this age-old pattern. Certain kinds of things can be achieved by techniques and formulae, but originality and creativity are not among these. The act of seeing this deeply (and not merely verbally or intellectually) is also the act in which originality and creativity can be born. (Bohm 2004, 32)

Hopefully our analysis has made available some conceptual resources to make sense of Bohm's remark, in a way that might free higher education pedagogy from the root figure of ideology, which is the idea that 'everything can be obtained if only one has the right techniques and methods'. It seems to us that this propensity of self-blinding might well stem from existential fear, which, like creativity, became possible with memory and anticipation. Thus, the price we pay for our enhanced cognition is just the other side of the coin that is its greatest prize.

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