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Enculturation of an Animal

Abstract

Once we have made a sound theoretical claim that the mind is embodied, and once we have agreed about the profound impact culture has in shaping our embodied behavior, it follows that embodiment and enculturation co-evolve and are cooperative rather than contrastive. A fundamental argument supporting such conclusion is that of evolutionary continuity, and the gradual progression from simple to more complex forms of life, without cessation or gap. Such an approach may be taken to soften the existing boundaries of identity that set us and (animal) otherness apart in an exclusive way. This, in turn, facilitates the conclusion that, not only in principle, living organisms simpler than ours are also capable of experiencing and behaving in a way not unaffiliated to ours. Enculturation then no longer appears as uniquely human. The "animal turn" confronts us with massive evidence that justifies the use of the terms "animal sentience" and "animal cognition" – also "animal culture". Here it will be exemplified by brief survey of the animal capacity to perform rudimentary arithmetic operations. If so, enculturation is by no means an exclusive privilege of homo sapiens and extends down to the elementary (corporeal) levels of the living.

Keywords

dualism, continuity, graduality, otherness, embodiment, enculturation, animal culture, bio-cultural co-evolution

"Culture gets under the skin and skull…"

A. Roepstorff

1. Dangers of Dualism

For a long time, the gist of the nature-nurture discussion and the core of the disputes about the relation between biology and culture has involved the dual counterpointing of what exists in nature (which is mainly subject to exploration by evolutionary biology) and what is created by humans (and is studied by disciplines that deal with various forms of cultural achievements). It seems that the primary goal of such bipolarity was a clear-cut delineation between the two, which in the final instance has resulted in the reinforcement of human superiority over subordinate nonhumans. The history of science and the humanities is but a long story of such a dichotomy that celebrates human uniqueness and our dominance over the rest of the living world.

Distinctiveness alone is not the major problem of dualism; it is actually not the problem at all. Both theorists and common-sense reasoners need clear differentiation in order to discriminate right from wrong, good from evil, true from false, beautiful from ugly, 'left' from 'right', etc. The real 'danger' lies in the implication of consequently applied dual oppositions where the identity of *A* is established by the absence of elements affiliated with *Y*. Accordingly, those predicates attributed to *A* have no place in the domain of *Y*. That is, *A* can only then be identified as such if it contains no ingredients of *Y*. Even

more, *A* is considered to be *authentically* what it is only if it in no way resembles *Y*. The price for such radicalization is high; what was meant to be a means of differentiation turned out to be a tool of discrimination, based on contrast and polarization; and in the final instance – exclusion. It is the latter that represents the gravest aspect of dualism. Applied to our current discussion, it would mean that whatever properties we connect with humans are unlikely to be found among animals, and vice versa. Our cultural history is burdened with such basic theoretical construct that grants our anthropocentricity virtually limitless authority to place *homo sapiens* on top of the evolutionary pyramid (or tree) and so distance itself radically from 'otherness'.

An additional consequence of dualism is that it leaves our apprehension of the world not only contrasted but also segmented. Gaps are installed whenever one finds the possibility to make distinctions, as if the only way to discriminate is to dichotomize. Because one tends to interpret specifics in terms of separation and understands separation as oppositions, the world as it appears to human understanding is consequently fragmented. Thereby, problematic is not one's desire for differentiation (for we have to account for the multiformity of the world); what seems most problematic is that, for dualists, differences are understood in terms of exclusiveness. Biology and culture are no exception to this. They too are victims of such bipolarization that allows no 'common denominator' between the body and mind, biology and culture, corporeality and enculturation.

"In our view it is exactly the radical opposition of nature and culture that has proved to be rather counterproductive […]." (Baerveldt, Verheggen and Voestermans, 2001, 52)

It is even more so when we become aware that it leads to "hyperseparation":

"The dualistic thinking fosters a hyperseparation in which differences between humans and animals, or culture and nature, are emphasized and magnified (Plumwood, 1993)." (Kalof 2003, 161)

In short: making distinctions is one of our basic theoretical tools; identifying something as being in some way specific and distinct from something else is a legitimate and useful explanatory method. However, it becomes problematic (or counterproductive) when the either/or schema is applied, the consequence of which, in this context, is a discriminatory attitude towards the nonhuman. Once it is inaugurated, the margin is set between the savage and the sapient; the caveat is set between us and 'others'. It is this exclusiveness that will be questioned and critiqued in what follows.

2. Continuity

Discontinuity seems to be the natural ally of dualism. Once you create *dichotomies* there is a tendency to see them as *discontinuous*. However, there are enough valid scientific reasons to support the idea of continuity as a more adequate model of presenting evolutionary processes, and that is something that will be elaborated below.

"… there is no radical discontinuity, no need for a skyhook, to get us from spiders and beaver dams to Turing and Turing machines" or – according to the same author – "from bacteria to Bach" (Dennett 2017, 58). I will presently not spend much time in explicating the reasons in favour of continuity; here I want to briefly bring to attention an aspect, hidden and not so obvious – and it

has to do with how we perceive organisms and processes from an evolutionary perspective. Namely, there is an intuition that we seem to create a sense of belonging to the present that is, in spite of continuity, perceived as distant or detached from the past. By identifying ourselves with the present and locating "others" in the past, we distance ourselves from other forms of life that we place in the past and judge to be unrelated to us. Keeping in mind several hundred thousand years of evolution creates an image that it is the time-span that separates us, *homo sapiens*, from other species that lack reason.

A simple but powerful idea follows from the above: the more we are (modern) human, the less we are (past) animal. The more we progress towards the creature we are now, the less we are what we once were in our past. As if being more human must necessarily mean that we are less – or no more – animal; that *homo sapiens* overpowered and tamed the ape in us definitely and forever; that the human mind silenced the entirely animal sentience from which it emerged. However, this idea is fatally false. Biological memory cannot be switched off, nor can our paleontological past. The consequence of the fact that they cannot be erased is that the animal is our constant companion and a constitutive part of us, even if our perception of it may fail to recognize it.

I thus think that the continuity thesis requires further support in order to make the idea yet more convincing that, to put it in somewhat simplified terms: there were, for instance, emotions before the humans emerged on the evolutionary scene (as a quite different kind of animal) and those emotions persist in their existence now that we think we are no longer animals. There are elaborate means of communication among animals; human animals just take it to a more advanced level. Similarly, there were forms of sentience prior to the *animal rationale* who continues to improve the forms of reasoning they have inherited from nonhuman animals.

In order to reinforce the continuity theses, stating basically that our animality is not captured in the past but is rather a component of what constitutes us as human beings, it would be helpful to consider the concept of gradualism, as it may additionally provide arguments against discontinuity.

3. Gradualism instead of the Gap

Being critical of the dualist explanations, as outlined above, invites us to look for an alternative view that would preferably avoid the perils of the gaping that discontinuity has seeded, and successfully cultivated, in the past, so that it has become a widely accepted scientific stereotype. I believe that a proper response to it may be found in the idea of *gradualism*.

Gradualism is a hypothesis roughly saying that evolutionary processes are unbroken; that (as famously claimed by Leibniz) *natura non facit saltus*; that at no point – even when *homo sapiens* emerged on the evolutionary scene – is there a "saltus" that would justify rupture between higher and less complex forms of life, also distancing humans from their closest kin. Interestingly enough, the most recent research (after a longer period where Darwinism was challenged when it came to explaining novel morphologies among populations) provides support for the Darwinian concept of gradualism (Pagel, O'Donnovan and Meade, 2022; also ScienceDaily, 2022). According to this, the emergence of new biological forms results from a process of small steps, incrementally and at a steady pace through a longer period of time. In other words, variations in nature, no matter how different in form and function, do

not happen in saltations, but slowly and gradually, that is without fracturing continuity and without obstructing the preservation of the existing.

What Darwin calls 'perspective on gradualism' (which dictionaries define as the process of variation in the evolution of species that happen slowly and incrementally; see e.g. Mayer and Gamble 2024) may be taken as a helpful (almost healing) concept against the idea of discontinuity that results in the picture of a gapped world, usually accompanied by antagonisms, as the evolutionary leaps are interpreted in a radical way, emphasizing the novel and different and being less prone to recognize the common.

Following Darwin, Dennett (2017), trying to explain how mental faculties are brought about, formulates a credo: "comprehension comes in degrees" (Dennett 2017, 94ff). In other words, comprehension that emerges from simple forms of sentience to ever more complex modes of cognition, evolves in a gradual way, that is without seizures that (would) inhibit preservation and force the process to start anew whenever continuity is endangered. I believe it can prove useful as a model that basically explains also how enculturation comes into life, thanks to co-evolving with biology that progresses in degrees, that is without ruptures. As Dennett further suggests:

"… we might invert the traditional order and *build comprehension out of a cascade of competencies* much the way evolution by natural selection builds ever more brilliant internal arrangements, organs, and instincts without having to comprehend what it is doing." (Dennett 2017, 38; emphasis added).

Clearly, not only comprehension comes in 'cascades' and degrees; virtually all processes and faculties resulting from evolution are gradual.

"Evolutionary processes brought purposes and reasons into existence the same way they brought color vision (and hence colors) into existence: *gradually*." (Dennett 2017, 38, emphasis added)

The view that evolutionary processes happen by degrees, and are gradual, strengthens additionally the continuity thesis and encourages us to dare a methodological strategy that would redirect the course of investigation from the crowning achievement of the human species – culture – back to our biological 'roots'. If there is no gap in enculturation (the elevation of the biological to another level of competence it did not previously possess), one should neither expect any obstacle in the reversed process of tracing the cultural transformation it is based on. I imagine this is how sensing evolved into sentience, and sentience evolved into cognition, and culture in general.

If comprehension 'comes in degrees' and in 'cascades', that is gradually, then it speaks in favour of a smooth transition from simpler to more complex forms of life; from '*primitive*' behaviour to the *enlightened*. There is no reason to believe that it is any different with enculturation, which emerges from evolutionary processes and ever better attunement to the environment, due to our embodied interventions and enactive coping (Hutto and Myin, 2012, Hutto and Myin 2017; also Menary, 2006), suggesting that our being-in-the-world is largely independent of what is going on 'within the head'. Once we accept such view (that new phenomena do not emerge suddenly and unrelated to preceding ones), then there is no obstacle to the assumption that the *past is always with us*; that the wisdom of evolution continuously whispers to us living in actuality; that old structures have their share in the new ones (e.g. the brain); that biological memory lives next-door to cultural development; that the corporeal is a useful companion to cognition, and culture too.

I take the idea of continuity and gradualism as two concepts strongly in favor of *bio-cultural co-evolution*. If the two are not perceived as alien to one another and once we accept that *nature* and *nurture* are intimately interrelated, the path is opened also to the reinterpreting of corporeality as the ultimate justification for the *embodiment* of the mind. In fact, I take it as the final argument expected to strengthen the view that culture and biology interact on the most elementary level of living beings, the human and nonhuman.

I therefore propose that, in addition to the usual approach of following the evolutionary progress from the 'primitive' to the cultured, from the apes to the human being, we make an effort to adopt a reverse perspective, which I believe can be seen as a complementary strategy to the former.

Let me try to find out whether there is a presence of what we like to see as uniquely human also among the less sophisticated nonhuman "others". In order to do this, it is advisable to redirect our observation from the realm of the cultural, which we attribute exclusively to humans, back to simpler biological organisms, and to see whether forms of enculturation can also be found among animals other than ourselves. For if the crude demarcation between *homo sapiens* and 'otherness' holds, it seems unlikely that anything worthy of being called culture can be found among living beings other than ourselves. However, there is something I would like to call the *terrestrial unity of life*, where living beings coexist within the shared environment and the socially interdependent communities that have been established throughout the long period of mutual co-evolving. A way to strengthen this idea is to look at the lower branches of the evolutionary tree and check whether traces of enculturation can be found also among nonhumans. And, indeed, there is evidence of the impact of nurture on the most elementary forms of the living. For instance, according to Jesse Prinz:

> "Even microscopic organisms, like lowly nematode worm, are influenced by both nature and nurture. These tiny creatures are capable of associative learning. In the lab, they will show a preference for chemical environments like those in which they have found food. Warms that have found food in sodium solutions will gravitate towards sodium, and those who have found food in chloride will gravitate towards chloride. Their taste in food is determined by nature, but their knowledge of where to find it is driven by nurture." (Prinz, 2012, 5)

4. 'Culture is not Monolithic'

If there is biological continuity – an ungapped process of evolutionary growth from simple to more complex forms of life – and if it happens gradually, allowing for the preservation of the previous without the loss of the old or past, then there seems to be sufficient reason to believe that we can reverse the direction of analysis in that we start from culture, widely considered to be uniquely human, and then track it back to more primitive versions of us, in order to eventually find some early forms of it. The assumption is that evolutionary linearity, unbroken as it is, can be (not only in principle) taken to restore the presence of cultural forms also among animals other, and simpler, than us (as already suggested above).

After dwelling over dilemmas whether animals have consciousness (Low, 2012; Nagel, 1974; Griffin and Speck, 2004; also the very recent The New York Declaration on Animal Consciousness (2024) or minds (Andrews and Beck, 2014); whether they have emotions (Brensing, 2020; Safina, 2015); whether they are capable of learning (Tomasello, Kruger and Ratner, 1993;

John, 2008) and whether they show empathy (Church 1959); to what extent they are sentient (Duncan, 2006; also the journal Animal Sentience); can intelligence be attributed to animals? (Godfrey-Smith, 2017); do they possess anything like the soul? (Montgomery, 2015); is it justified to talk about animal cognition? (Andrews, 2014; Wooster *et al*., 2024), it seems that the level of expertise to which 'animal studies' (Waldau, 2013; Kalof, 2017) has brought us, allows us now to also ask: "Can (nonhuman) animals have culture?" The question is still considered controversial (Roscher, Krebber and Mizelle, 2021, 163), but following the solid body of data amounted in the couple of past decades, animal culture should not appear as such any longer (e.g. Galef, 1992; Whiten *et al*., 1999; Laland and Galef, 2009; Tomaselllo, 2009).

A good start in an attempt to find an answer to it is to consider the view that "culture is not monolithic" and also that *culture is an evolutionary process* (Boesch and Tomasello, 1998). I guess, one way to understand this is, first, to assume that culture is not only of one (human) kind and that it is, in its multiformity, distributed in the living world beyond the boundaries of the human species; second, that culture is not to be conceptualized as a kind of infrastructure imposed upon the biological layers that constitute us, but is rather to be seen as a phenomenon emerging from and co-evolving with biology.

"When historians talk about culture, either high or low, they have almost exclusively focused on human beings – understandably, given the source material available. The work of several biologists, however, has begun to challenge the idea that culture is something confined to humans, showing that certain other species do indeed have what might be referred to as culture." (Cowie, 2021, 163)

What is here, somewhat timidly, hinted as a possibility has already been articulated in more explicit terms by some other authors (such as Bonner, 1980; Tomasello, 1994; Boesch, 1996), who have collected impressive evidence of cultured behavior among some of our closer biological relatives. As Boesch and Tomasello point out:

"Culture has traditionally been attributed only to human beings. Despite growing evidence of behavioral diversity in wild chimpanzee populations, most anthropologists and psychologists still deny culture to this animal species." (Boesch and Tomasello, 1998, 591)

And further:

"In comparing chimpanzee and human cultures, we have noted many deep similarities." (Boesch and Tomasello, 1998, 604)

There is nowadays a growing evidence of the presence of enculturation in the nonhuman animated world. For instance, a bounty of experiments has been done resulting in the conclusion that animal learning is not reducible merely to copying or imitation (e.g. Kalof and Resl, 2007); it is rather the case that animals invent and develop their own forms of the improvement of behavior (e.g. Galef, 1992) (only the latter qualifies as a manifestation of the cultural).[1] All of these illustrate that, indeed, culture is 'not monolithic', that is, not restricted to humans, but rather distributed in the multispecies world that includes also living organisms simpler than ours. After affirming continuity and graduality, and after accepting 'culture as a non-monolith', there is no obstacle to envisaging a smooth transition from sensing to seeing, from intuiting to imagining, from competence to comprehension, from sentience to symbolizing, from embodiment to enculturation.

The conclusion that makes us aware that culture is not exclusively human is, however, in my view, partial unless we accommodate our understanding to the possibility that no matter how culturally superior we feel ourselves to be in regard to 'others', we can never isolate ourselves from our biological past and our own animality; not even when we engage in performing complex tasks and high-level cognition. (That aspect, however, cannot be expounded here in a more detailed way.) In other words, my inner ape is always with me (to sense, to feel, to react and suggest) *before my reasoned 'self' comes to words*.

This should by no means be interpreted as a deprivation of our uniqueness or some sort of diminishing of our distinctness, or as a subtle attempt to erase differences among species and conclude overenthusiastically that 'we are just the same'. What may appear as a loss of the privileged position (and one that we have so systematically self-promoted throughout history), is actually to be taken as a contribution to a better (and scientifically more founded) understanding of our relation to the animated world and our place in it.

5. Enculturation Meets Evolution

Once we allow for the possibility that we are not the sole creatures capable of enculturation (as illustrated above), then it must affect also our notion of *otherness*; it in turn facilitates a fresh self-perspective and helps redefine our place in the animated world, as in Donna S. Haraway's (1991) suggestive phrasing that 'we polish an animal mirror to look for ourselves' (quoted in Kalof, 2003, 161). Likewise, Giorgio Agamben sees the kind of encounter as "the device for producing the recognition of the human" (Agamben, 2004, 26).

A further argument for softening the barrier toward the (animal) "other" is that the demarcation line we draw between us and other animals is, from a scientific perspective, pretty arbitrary:

> "Our selective group of animal other is a peculiar one: there is, after all, a far greater distance in terms of form, anatomy, physiology and function between a bee and a pig than between a pig and human […]. Nevertheless, we continue to construct the so-called 'species boundary' which divides 'us' and 'them' between humans and pigs; not pigs and bees." (Tiffin, 2007, 245)

This perfectly illustrates what Bucholtz, Liang, and Sutton (1999) had in mind when they said that "(i)dentities are actively constructed performances rather than preexisting roles" (quoted in Kaloff, 2003, 163).

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Researchers studying Japanese macaques in 1950s noticed that some of them started to wash potatoes in the sea in order to get rid of the sand. It was soon imitated by others in the group and acquired as an improved way of eating the food. Researchers were surprised as they found out that the same behaviour could be reported also among monkeys living on other islands and the mainland. Clearly this could not be a case of imitation, as populations were living on different geographical locations, but rather a cultural phenomenon (e.g. Fiore *et al*., 2020; see also Sheets-Johnstone, this issue). Another example is that of animal communication. We usually think that it is merely hereditary and that it is exclusively learned by imitation. However, more recent experiments show that birds, dolphins and whales (to name only some) vocalize and exchange not in the 'universal' language but by using variations, which researchers see as accents and dialects that develop according to their genetic and also environmental, behavioural, and social conditions (e.g. Henry, 2015).

There are obviously no stable (and particularly no scientifically reliable) criteria for setting the margins between us and other animals. The 'species boundary' seems to be arbitrary; margins of identity porous. It also means that 'otherness' is experienced according to the measure *we* have tailored and which are therefore not freed from anthropocentrism – the perspective that can only present "the world according to us" (Sellars, 1962; discussed also in Dennett, 2017, 61). Ever since we baptized own species as *homo sapiens sapiens*, and so installed us on the top of the evolutionary advance, we have distanced ourselves from the 'others': pigs and pigeons, bears and bees, cats and fish. Enculturation is regularly taken as a strong argument in favour of our superiority and a reason for imposing the chasm between us and (animal) others. Such methodology has blinded us to recognizing how much similarity there is among living beings and how much we (humans) owe to those below us on the tree of evolution.

I believe that, particularly after the "animal turn" (see e.g. Calarco, 2020; Ritvo, 2007; McCracken and Steel, 2011), we now have enough reliable scientific sources to redirect our attention from *specificity* to *similarity*; trying to recognize *commonality* where we were thus far only able to see *contrast*. Once we adapt to this changed optics, we will realize that the status of culture, as we know it in the standard literature, alters too. For example, we will have to face the fact that culture meets biology on even more elementary levels.

> "It is clear that the processes that make up the human cultural tree have very deep evolutionary roots, and we cannot hope to understand the branches and leaves of this tree without the understanding of these roots. In performing comparative studies with chimpanzees in particular, it is vitally important that we not become distracted by volatile issues of human uniqueness or lack of uniqueness but focus on both the similarities and the differences so that we may understand more deeply the *working of culture as an evolutionary process*." (Boesch and Tomasello, 1998, 604; emphasis added)

Seen in such way it is not only about expanding the scope and providing additional data on the nature of our 'roots'; it is rather that by acquiring a more competent insight into animality, we gain a new possibility of looking at our cultural 'branches and trees'.

Cultural coping in-the-world is *not contemplative*; it is basically *corporeal*. To say that requires at least some kind of illustration or evidence. Allow me to mention some insightful examples I have discussed, in somewhat different context, and in more detail elsewhere (Radman, 2012; Radman, 2017). For instance, for Steven Pinker *language is an instinct* (Pinker, 1994) and is more like "an art, like brewing or baking" (Pinker, 1994, 6) – or, according to Alva Noë – it is like barking (Noë, 2009, 108). Andy Clark goes a step further as he remarks:

> "Making the expert medical judgment […] has more in common with knowing how to ride a bicycle than with consulting a set of rules in a symbolic data-base." (Clark, 2003, 312)

Obviously, according to these authors, even more complex forms of enculturation are acquired by the body and are performed without having to engage the thinking 'self'. And if that is the case then there is no obstacle to allowing for the possibility that 'others' are, within their capacities, capable of exercising that we thought is our distinctive feature and exclusive privilege.

If our assumption that enculturation is embodied process and that complex cultural practices can be performed effortlessly, and away from awareness also by organisms simpler than ours, is founded, then the conclusion at hand

seems to be that, to put it somewhat bluntly, *culture does not require a thinker*. Such a claim implies that *cultural processes get acquired by the body* or, in other words, that *enculturation* cannot be adequately and fully explained without recourse to *embodiment*. To say that *culture is corporeal – or carnal* – implies that cultural competencies get expressed away from awareness or conscious deliberation: that much of cultural behavior is instantiated by means of automation, more like a skill than a result of reasoning.

6. We Are 'Just' Cultural

No matter how sophisticated forms of animal life are and how fascinated we are with their amazing skills with which they perform fairly complex actions, we promptly state that it is what they 'just do' by nature. Birds *just* sing, dogs are *just* friendly and devoted, octopuses are *just* attentive to novel objects, parrots *just* imitate human voices, dolphins are *just* helpful to endangered swimmer, etc. When it comes to humans, we as a rule find 'reasons' and 'purposes' for whatever we do because we assume that every human act is moved by a kind of deliberation and that there is no behavior without some preconceived plan 'in the head'; that execution of an action follows only after instructions by 'higher cognition'. It is particularly true of cultural practices; the more complex they are, the more we see them to be dependent on reasoning and thought. Yet such an equation is unfounded.

Huber Dreyfus is one of the philosophers merited for making an extended and profound analysis of the role and capacities of the body to acquire complex skills and perform tasks without recourse to intellect; for instance, in converting the level of knowing of a *novice* into *expert knowledge* of an experienced agent (e.g. Dreyfus and Dreyfus, 1988). If we take this lesson and draw conclusion about the potential of corporeality to enable us to perform high-level tasks without having to engage in conscious deliberation, the way is open to conclude that cultural activity can also be performed by relying on the bodily know-how – in a quasi-autonomous way and away from the brain-centered supervision. If culture is incorporated and is made available to us in a way that is performed spontaneously and effortlessly – which can be done because such behavior does not necessarily require the authority of the 'self' – then, as already pointed out, there is no logical or other reason to oppose the view that enculturation, at least partly, resides in the domain of embodiment. It too qualifies for activity that 'just happens'.

As there is sentience without the 'I', so is our cultural behavior not dependent on the reasoner that puts it in action. Action, namely, unfolds – also in its complex forms – effortlessly and spontaneously because the body takes it over. We can then say that we talk with the same ease by which birds sing; that we gesture without having to think about the movements of our hands, just as fish move their flosses; that we read with the same routine we row; that we play the piano just the way small kids play with balls and building blocks. Not only simple motor acts of which we are unaware (like breathing, walking, eating, drinking) but also more demanding ones (such as gesturing, reading, calculating, driving) 'just happen'; high-level cognitive tasks (also exemplary of cultural behavior) are equally performed as unconscious routines (e.g. Bargh, 1994; Bargh and Chartrand, 1999). What becomes available to the thinker has been already available to the embodied agent; what emerges as an act of cognition is pre-shaped by corporeal competencies; what is recognized as a

manifestation of human culture is intimately allied by our animated (animal) body. Just as we breath and drink so do we communicate (verbally or by using bodily 'language') and calculate, structure plans of action, make decisions and shape creative impulses. As Nelson Goodman poignantly puts it:

"Dogs bark because they are canine, men symbolize because they are human; and dogs go on barking and men go on symbolizing when there is no practical need just because they cannot stop and because it is such fun." (Goodman, 1972, 114–115)

Barking and symbolizing then have more in common then we intuit. The spontaneity with which dogs bark is very much like the routine by which we humans converse (particularly in a daily small-talk). Talking, as an incorporated practice, is also not much different from walking. A confirmation for the kind of idea can be found in Richerson and Boyd (2005), who come to the same conclusion:

"Culture is as much a part of human biology as walking upright. Culture causes people to do many weird and wonderful things." (Richerson and Boyd, 2005, 7)

What I want to point out, however, is that all the "weird and wonderful things" – also fun – with which enculturation enriches and improves the lives of living organisms, get embodied throughout epochs of practicing so that (through process of learning by repeating) they are performed spontaneously and in an automated way – very much in the manner of 'just doing'. Accordingly, a cook is just tasting and a painter is just painting, and pianist just playing. Time and again, I have the feeling that I am 'just writing', as sentences come to the conscious 'I' in an almost complete articulate form. I then feel more like a scripter than an author; as somebody who has been transcribing what my inner embodied knower has conveyed to the philosopher seeking for inspiration and how to best formulate it. And, indeed, inspiration does 'just' come (if one is intensely immersed in the particular activity and already possesses competence in the domain) and we are often surprised about the outcome the conscious subject has not envisaged. There is nothing miraculous about it. No muses are required as inspiration comes from the corporeal memory and experience.

The final section is an attempt to illustrate and provide some evidence that supports the above, more general, claim, and grant us an insight into the world of animals other than us that display astonishing faculties, we thought are our sole privilege and pride.

7. Animals and Arithmetic

If there is a domain that is of all areas of knowledge the least likely to be affiliated with embodiment (not only for common-sense reasoners but theorists too), it is certainly *mathematics*. The idea that nonhuman animals may be capable of counting, or even calculating, appears minimally convincing and as a sort of generous anthropomorphism. And yet, as new investigations provide us with novel insights our interpretation has to reconsider the habits of thought and adjust our judgments accordingly.

Assuming that numerical abilities can be taken as a form of a more general cultural competence, let me at least briefly, and exemplary, review the investigation that provides elaborate support for the assumption that arithmetic and the animal are not unrelated or incommensurable. In the passage entitled "The

Numerical Abilities of Animals" Georg Lakoff and Raphael Núñez state the following:

"Animals have numerical abilities – not just primates but also raccoons, rats, and even parrots and pigeons. They can subitize, estimate numbers, and do the simplest addition and subtraction, just as four-and-a-half-month-old babies can." (Lakoff and Núñez, 2000, 21)

And (referring to Church and Mack, 1984), add further:

"In other series of experiments, scientists showed that rats have an ability to learn and generalize when dealing with numbers or with duration of time." (Lakoff and Núñez, 2000, 21)

Just as we have to revise prejudices about what infants can and what they cannot do at a very early age in development (mostly by facing new experimental evidence that lowers the threshold of acquiring cognitive abilities, compared to the traditional standards, to ever earlier stages) so do we have to reconsider old stereotypes about animal's cognitive, and cultural, capacities (so that we allow for the possibility that animals too are capable of enculturation). As Lakoff and Núñez further state:

"Nonhuman primates display abilities that are even more sophisticated. Rhesus monkeys in the wild have arithmetic abilities similar to those of infants […]." (Lakoff and Núñez, 2000, 22)

They can even learn to discriminate numbers:

"Other researchers have shown that chimpanzees are also able to calculate using numerical symbols." (Lakoff and Núñez, 2000, 22) […] Although these impressive capacities require years of training, they show that our closest relative, the chimpanzee, shares with us nontrivial capacity for at least some innate arithmetic along with abilities that can be learned through long-term, explicit, guided training." (Lakoff and Núñez, 2000, 23)

One thing seems to be now pretty certain: *cognition and culture were not brought to existence with homo sapiens*. Living organisms simpler than ours display a solid repertoire of enculturation, developed, improved and fine-tuned throughout the long evolution of species; it certainly is significantly simpler, yet it also proves that the 'species boundary' is porous and that there is commonality between forms of life on both sides of it, of which we slowly seem to be growing a more competent insight.

Conclusions

Can bodies other than ours, and can minds simpler than human, function and perform in some (if not similar than comparable) way, effective enough to bring about advanced forms of behavior, in spite of the differences in their anatomical, physical and neural complexity? I have been focused here on culture, widely recognized as pre-eminently a human endowment, yet, according to the most recent investigations, forms of enculturation are to be found in the living world of species simpler than us. The response to the question may be a straightforward one: the degree of complexity and the measure of similarity is not decisive for judging what any living organism can or cannot do. In spite of our anthropocentric arrogance, species simpler in their structure and function compared to us (we also tend to perceive as 'others') are still capable of some forms of enculturation. Obviously, evolution has not been as discriminatory toward the 'primitive', as we in our theories are.

In philosophy, the reference to the animal has been mostly metaphorical; in order to single out some of our specific traits, humans are designated as:

"*animal* rationale", "*zoon politicon*", "*animal* morale" and *"animal* sociale"; also "*animal* symbolicum", and similar. All of them are handy labels lacking any more immediate designation to true animality. However, as hinted above, even as social and moral beings, and as "symbolic animals", we are still biological beings who cannot possibly depart completely from the "beast" in us. In spite of the formative power of symbols that has promoted us to *animal symbolicum* – a unique creature capable of the creative use of symbols that has profoundly transformed our raw biological nature – I am still an ape, with its evolutionary 'burden', organismic components and corporeal competences that all play important role in my behavior and help me bring about my cultural needs and fancies.

And if it is so that culture does not necessarily need a thinker, a skilled body, trained to be 'just cultural' suffices to perform complex tasks. Previous assumptions had it that thought can only be accomplished under the surveillance of a superior 'self'. Yet, it is mostly not the thinker that is in charge of the behavior to which we attribute cultural properties, but rather an embodied and enculturated subject, a competent corporeal agent, who has acquired cultural practices so that s/he can cope in the world effortlessly, even when it comes to performing of highly complex tasks.

Only if we make an effort to critically face the stereotype of thought that has installed a gap between the body and mind, corporeality and cognition, biology and culture – and so also between humans and nonhumans – and instead acquire a perspective that perceives enculturation, even in its advanced forms (be it calculation, music performance or surgery) is profoundly corporeal, can we fully appreciate saying that 'culture gets under the skin and skull' (Roepstorff, Niewohner and Beck, 2010, 1052) and also that "culture is actually an embodied affair" (Voestermans and Verheggen, 2013).

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Zdravko Radman

Enkulturacija jedne životinje

Sažetak

Jednom kada smo iznijeli čvrstu teorijsku tvrdnju da je um utjelovljen i jednom kada smo se složili oko značajnog utjecaja koji kultura ima na oblikovanje našega utjelovljenoga ponašanja, slijedi da utjelovljenje i enkulturacija ko-evoluiraju te su kooperativne prije nego kontrastivne. Temeljni argument koji taj zaključak podržava dolazi od evolucijskog kontinuiteta i gradualnog napredovanja od jednostavnijih prema složenijim oblicima života bez zaustavljanja ili praznina. Takav se pristup može uzeti u svrhu omekšavanja postojećih granica identiteta koje nas ekskluzivno odvajaju od (životinjske) drugosti. To, povratno, potpomaže zaključak da – ne samo načelno – organizmi jednostavniji od naših također mogu iskušavati i ponašati se na način koji nam ne bi bio stran. Enkulturacija se, tada, ne pojavljuje više kao jedinstvena za čovjeka. »Životinjski obrat« sučeljava nas s ogromnim dokazima koji opravdavaju korištenje termina »životinjska svjesnost« i »životinjska kognicija«, također i »životinjska kultura«. Ovdje će se to oprimjeriti sažetim pregledom kapacitiranosti životinja za izvedbu osnovnih aritmetičkih operacija. Ukoliko zaključak stoji, utoliko enkulturacija nije ekskluzivna privilegija Homo sapiensa *te se proteže do elementarnih (tjelesnih) razina živućih bića.*

Ključne riječi

dualizam, kontinuitet, gradualnost, drugost, utjelovljenje, enkulturacija, životinjska kultura, bio-kulturna ko-evolucija

Zdravko Radman

Enkulturation eines Tieres

Zusammenfassung

Sobald wir eine tragfähige theoretische Behauptung aufgestellt haben, dass der Geist verkörpert ist, und sobald wir uns über den tief greifenden Einfluss der Kultur auf die Gestaltung unseres verkörperten Verhaltens geeinigt haben, folgt daraus, dass Verkörperung und Enkulturation

ko-evolvieren und eher kooperativ als kontrastiv sind. Ein grundlegendes Argument zur Untermauerung dieser Schlussfolgerung ist das Prinzip der evolutionären Kontinuität sowie der schrittweise Fortschritt von einfachen zu zunehmend komplexeren Lebensformen – ohne Aufhören oder Bruch. Ein solcher Ansatz kann dazu beitragen, die bestehenden Identitätsgrenzen aufzuweichen, die uns und die (tierische) Andersheit auf exklusive Weise voneinander trennen. Dies wiederum erleichtert die Folgerung, dass Lebewesen, die einfacher sind als unsere, nicht nur prinzipiell, sondern auch tatsächlich imstande sind, Erfahrungen zu machen und sich in einer Weise zu verhalten, die mit der unseren nicht unvereinbar ist. Enkulturation erscheint somit nicht länger als ein einzig und allein menschliches Phänomen. Die „tierische Wende" konfrontiert uns mit einer überwältigenden Fülle an Belegen, die die Verwendung der Begriffe „tierisches Empfindungsvermögen" und „tierische Kognition", ebenso „tierische Kultur", rechtfertigen. Hier wird dies anhand einer kurzen Untersuchung der Fähigkeit von Tieren veranschaulicht, grundlegende arithmetische Operationen auszuführen. Falls dem so ist, stellt die Enkulturation keineswegs ein ausschließliches Vorrecht des Homo sapiens dar, sondern erstreckt sich bis hin zu den elementaren (leiblichen) Ebenen des Lebendigen.

Schlüsselwörter

Dualismus, Kontinuität, Gradualität, Andersheit, Verkörperung, Enkulturation, tierische Kultur, bio-kulturelle Ko-evolution

Zdravko Radman

Enculturation d'un animal

Résumé

Une fois que l'on a établi une affirmation théorique solide selon laquelle l'esprit est incarné, et reconnu l'influence déterminante de la culture sur la formation de notre comportement incarné, il en découle que l'incarnation et l'enculturation ne s'opposent pas, mais coévoluent de manière coopérative. Un argument fondamental soutenant cette conclusion est celui de la continuité évolutive, et de la progression graduelle des formes de vie simples vers des formes plus complexes, sans rupture ni hiatus. Une telle approche peut être utilisée pour adoucir les frontières existantes de l'identité qui nous séparent de l'« autre » (l'animal) de manière exclusive. Cela ouvre la voie à la conclusion selon laquelle, en principe, même des organismes vivants plus simples que le nôtre sont capables de ressentir et d'agir d'une manière qui n'est pas entièrement étrangère à la nôtre. L'enculturation n'apparaît alors plus comme un privilège exclusivement humain. Le « tournant animal » nous confronte à une masse de preuves qui justifient l'utilisation des termes « sensibilité animale » et « cognition animale » – ainsi que « culture animale ». Ici, cela sera illustré par un bref aperçu de la capacité des animaux à effectuer des opérations arithmétiques rudimentaires. Si tel est le cas, l'enculturation n'est en aucun cas un privilège exclusif de l'Homo sapiens et s'étend jusqu'aux niveaux élémentaires (corporels) des êtres vivants.

Mots-clés

dualisme, continuité, gradualité, altérité, incarnation, enculturation, culture animale, coévolution bio-culturelle