

Extending the Concept of Cognition and Meta-Theoretical Anthropomorphism

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Abstract How to deal with the controversies surrounding applying the concept of COGNITION to non-humans? I suggest a bottom-up approach that makes room for the pluralistic perspectives of non-human cognition researchers without disregarding philosophers' worries about overextending the concept. My proposal is that COGNITION should be a holistic story, in which no part can be understood without the context of the whole. If such a project is to succeed, however, we need to deal with anthropomorphism – not of the well-known, superficial kind, but understood as a deeply embedded framework determining how we understand cognitive life in general. After explaining what this kind of meta-theoretical anthropomorphism is, I argue that investigating non-human cognition is the best way to make explicit many of our hidden assumptions and re-examine them. In the second section of the paper, I present how this approach can be effective in reconsidering Brandom's proposal of how to define levels of concept use for the purposes of empirical research on non-humans.

Keywords Plant cognition. Animal cognition. Concepts. Extending cognition. Anthropomorphism.

Summary 1 Introduction: The Plants are not the Problem – We are the Problem. – 2 The Narrator and the Levels of Anthropomorphism. – 3 Brandom's Logic of Concepts. – 4 5a "Phytomorphic" Commentary on Brandom. – 5 Conclusion.



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1 Introduction: The Plants are not the Problem – We are the Problem

There is an implicit assumption made in the debate about COGNITION,¹ and especially in what Akagi (2022) aptly calls the “border wars” concerning the limits of what this concept could be applied to. This assumption is that COGNITION is a “human” concept, that its primary use is to describe something humans engage in, and that this is something we know. For example, whenever criticisms are made that whatever plants do, could not be called “genuine” cognition (and see Allen 2017, for a great response to such criticisms), the background assumption behind such criticisms is clearly that “genuine” cognition is something humans, possibly only humans, are capable of – it is also implied this is something more complex, more advanced. The very Call for Papers for this Special Edition encouraged authors to examine the consequences of “de-humanizing cognition”, which strongly suggests that cognition is originally something applicable to humans. It is common to accuse scientists and popular authors of “anthropomorphising” whenever they employ COGNITION (and related terms, such as ‘intelligence’ or, above all, ‘consciousness’) to non-human beings. This strong tie between concepts such as COGNITION and being human is also reflected in the fact that research applying them to non-human animals is often used to back educational and political efforts to promote animal and plant welfare.² When we are confronted with headlines that “plants are capable of some forms of cognition”, we usually think this means they are more “similar to us, humans” than we used to think. All this contributes to the impression that “human cognition” is something we grasp relatively well; it is *stretching* or *extending* the concept of cognition to apply it to other beings that is difficult. Moreover, the difficulty increases the farther we move away from humans along the evolutionary tree.

However, the reality of philosophy and cognitive science is quite different. As Colaço (2022) observes, the debate on COGNITION and

¹ Following other authors, I use capital letters to refer to the concept of cognition.

² One of the most poignant examples of this is the reception of the “Cambridge Declaration of Consciousness” (Low et al. 2012), which has been met with great enthusiasm by animal activists and lobbyists, and has been referred to by supporters of many legislative changes promoting animal welfare. One of the most significant passages of the Declaration states that “Convergent evidence indicates that non-human animals have the neuroanatomical, neurochemical, and neurophysiological substrates of conscious states along with the capacity to exhibit intentional behaviours. [...] *humans are not unique* in possessing the neurological substrates that generate consciousness. *Non-human animals*, including all mammals and birds, and many other creatures, including octopuses, *also possess these neurological substrates*” (emphasis added). The declaration itself focuses on the neural substrates, but the popular reception put emphasis on consciousness *simpliciter*.

related concepts is fuelled by dissatisfaction which is “not about these concepts not applying to plants. Rather, it extends to applying these concepts to humans and other animals”. This observation – that there is a deep problem with understanding “human cognition” – can shed more light on all three conceptual objections to applying COGNITION to plants pointed out by Colaço: 1) that “plant cognition” does not mean the same as “human cognition”; 2) that we do not need a concept implying “energy-expensive mental states” or a “representational dimension” or “doing things for reasons” in order to explain what plants do, and 3) that mere information processing is not “the mark of the cognitive”, because COGNITION should involve meaning, and, specifically, representational processing, including the capacity to misrepresent. All three criticisms hint at various qualities typically ascribed to “human cognition”: above all, intentionality, the involvement of internal representations that are at least partly independent of the external world (can be false), and the connection between cognition and action. Cognition should be a source of “reasons” for beliefs and decisions. Moreover, cognition is an action in itself, controlled and performed because of certain needs.

It is worth noting that all those features are extremely complex from the point of view of philosophy of mind, have historically been the subjects of the most heated debates, and those debates are still far from being resolved. Although the mainstream approach in cognitive science remains representational, new views have been introduced, especially within the 4E (embodied, embedded, enactive, and extended) paradigm and predictive processing, that shed a very different light on the nature and the role of representations in human cognition. Radical 4E approaches suggest that we can explain *human* cognition largely without referring to internal representations (cf. the ideas of radically embodied cognition offered by Chemero 2009 or Hutto, Myin 2013) who claim cognition can be explained largely without any reference to representational content). The extended mind hypothesis emphasises the role of external representations rather than internal ones. The predictive processing models of cognition are easily interpreted in a nonrepresentational way, or at the very least change the way we understand representations (cf. Williams 2018). Those paradigms, however, are typically criticised for not being able to explain those same “advanced” features that are, purportedly, the essence of human cognition – for example, there are doubts whether predictive processing models can account for abstract contentful representations, such as thoughts (Williams 2020) and the more radical non-representational ideas have met with fierce objections (cf. for example, Miłkowski’s 2015 attack on Hutto, Myin 2013 or Kirchoff’s 2011 general arguments against radically antirepresentational trends in the 4E paradigm). At the same time, both the 4E paradigm (the concept extended cognition in particular – see,

e.g., Parise, Marder 2023) and the predictive processing paradigm can be successfully applied to plants (Calvo, Friston 2017). When Allen (2017) discussed possible worries that a pluralistic view on COGNITION could harm the effort to create a unifying paradigm in cognitive science, the implicit reason for that was that overextending the concept to include simpler forms of cognitions would be the source of problems. It seems, however, that no less than two new paradigms in cognitive science that offer hopes for a unifying perspective are hampered not by plants, but by humans.

I think, therefore, that it might be wise to stop thinking in philosophy of “de-humanizing” COGNITION and of “extending” it from humans to plants - rather, we should change our perspective and worry about extending COGNITION from the most basic instances to humans. Naturally, the idea that we should build our theory of COGNITION from the bottom up is not new - it has been proposed both by more biologically oriented researchers, such as (Lyon 2006) and (Levin et al. 2021), and by more speculative, Hegelian philosophers working within the 4E paradigm. I am referring here to the concept of “participatory sense making”, introduced in De Jaegher and Di Paolo (2007) and developed in Di Paolo et al. 2023 to describe the continuity between simple life forms and the advanced linguistic capabilities that humans boast. I would like to propose, playing on the Hegelian intuitions behind Di Paolo and colleagues’ (2023) project, that we should treat the concept of COGNITION as a story. It is both a story that is still happening in the evolutionary life of our planet, and a holistic narrative. The earlier chapters, concerning the simplest organisms and their forms of interacting with the world, have to make sense in the context of the later chapters which concern human cognition. The later chapters can’t be understood without the knowledge of what happened before. The story is not always strictly coherent; many inconsistencies, subplots, brilliant twists, and blind alleys may occur. The narrative is not strictly linear. We don’t know, how it ends. For some of us, it begins with life itself, like for Stewart (1995), others will still seek the perfect spot to place their “bookmark of the cognitive”. However, everything that happens in the story is a necessary, indispensable part of what COGNITION is. Among the empirical researchers there are, and should exist, many strategies to tell this story or different parts of it. This view is not in contradiction with proposals introducing universal, highly malleable and applicable notions of COGNITION such as the modular definition put forth by Akagi (2022), Lyon’s concept of minimal cognition (Lyon 2020), Keijzer’s concept of cobolism (Keijzer 2021), and the programme of investigating basal cognition (Lyon et al. 2021). From the practical point of view, maybe it is even alright, as Allen (2017) suggests, if COGNITION is not strictly defined at all. I am also sympathetic to the pluralistic idea of various definitions of COGNITION as

a way of hypothesising about it (Colaço 2022). My only philosophical constraint is that we should think of COGNITION as a story that needs to be told in whole, from the beginning to where it is now, with the awareness that it is not ending with us. Specifically, we should not try to skip to the human chapter and define COGNITION in a way that grasps only the complex forms of cognitive activities humans engage in. If we have a philosophical stake in what is special about human cognition, we should be all the more eager to investigate the origins of cognitive processes even in unicellular organisms. In fact, we should embrace the chance to do so as this is the only real chance of achieving our goals.

And my metaphor of COGNITION as a story will serve me well to present the argument why this is our only chance: because of the narrator. In the following section, I will show that humans as narrators of the COGNITION story are prone to different levels of anthropomorphising, and that there is an important, meta-theoretical level that deserves our special attention. I will describe how we can work on challenging the meta-theoretical anthropomorphic assumptions with the help of research on non-human cognition. In the last sections of the paper, I will use the case study of Brandom's philosophical reconstruction of what our ability to use concepts entails (2009) to show how this strategy can work in practice.

2 The Narrator and the Levels of Anthropomorphism

Of course, so far, humans have been the narrators of the COGNITION story. This has at least two important consequences: first, that they are telling this story for human purposes, cognitive, ethical, and political, focusing on the human chapters; second, that they are themselves shaped by this story in a very particular way. As for the first consequence, I do not intend to debate whether this is right, wrong, or just inevitable – I simply acknowledge this special yearning to understand our own cognition and the reluctance to accept all the possible consequences of undermining our special status. I would like to focus on the second aspect, which concerns the often-discussed fact that COGNITION itself is an anthropogenic concept. It is a concept created by humans, a particular species of animals engaging in cognition in their particular way, and the concept's original purpose was to describe this way. Those are two good reasons why the use of COGNITION outside of the human realm can be criticised as “anthropomorphising”, but I think the first one – the fact that the authors of the concept of COGNITION are in fact only engaging in a special form of cognition without fully realising their constraints – is much more interesting and has much deeper consequences.

Let me elaborate. In Białek 2023, I have distinguished three layers of anthropomorphising in our research on non-human animals (and, presumably, plants). The first layer is cognitive – it’s the level of semi-automatic categorizations performed by our minds and based in all the heuristics and simplifications that make our everyday life with humans easier. My example of this type of anthropomorphism was the real-life story of how people tend to instantly interpret the smile of Ham the chimpanzee who was photographed before being sent in space, as a sign of positive emotions, although we now know from ethology that in reality it probably expressed fear. The second layer is narrative – it’s the level of the narratives in which we explicitly ascribe complex psychological (and typically human) phenomena to non-human animals. In my example, observing the smile led to a (blatantly false) conclusion that the chimpanzee had been proud of what it was about to accomplish. The crucial level I wish to discuss here is intermediate: it’s a deep, meta-theoretical anthropomorphism. In order to understand what I mean by this last kind of anthropomorphism, we need to observe that layer one semi-automatic perceptions shaped by our sub-personal systems can only fuel reflexive, layer two narrations if there is a background framework or theory linking phenomena like smiles with conjectures about someone’s sense of pride. In general, we can identify this intermediate theory as folk psychology, but I need to underline that it is anthropomorphic to a much deeper degree than it is typically recognised. In the discussed case, it is not only simply interpreting smile as a sign of pride that is anthropomorphic. The whole deep structure of this narrative, how evaluative states, physical behaviours, and beliefs are combined into a single story about an individual engaging with their world, is based in our human experience of the way those states, behaviours, and beliefs influence each other in our lives as human individuals. As humans, we have a particular way of understanding how cognitive states can work, what purposes they serve, how they influence and are influenced by other kinds of activity, as well as the environment. This deep structure organises our whole story of COGNITION in ways that may not always be apparent to us. Discovering this structure may be called a Kantian endeavour.

I maintain that this kind of Kantian approach to anthropomorphism can be interpreted optimistically, as Kant’s epistemology sometimes is: we can explore those underlying frameworks, and this process gives us the most important and useful kind of knowledge. I believe this is right, but that it also requires a conscious effort. The perfect way to become aware of the deep anthropomorphic structures framing our story of COGNITION is, however, not to stick to our anthropomorphic comfort zone, but, quite contrariwise, to challenge everything that seems so obvious to us. The surprise offered by the exciting insights about plants, creatures so different from

humans, can help us see clearly what is special about our cognition on a deep, structural level. It is as if a Kantian epistemologist could investigate aliens whose basic forms of intuition were different to our Earthly space and time.

In a similar vein, Nanay (2021) has suggested that we could reverse our anthropomorphic tendency and adopt “zoomorphism” as a philosophical explanatory paradigm, attributing mental states observed in non-human animals to humans. Nanay’s proposal sounds truly refreshing, as it consciously ignores the fact many authors (such as, for example, Wynne 2004; 2007), would claim that just to identify a “mental state” in a non-human animal is already anthropomorphic (and possibly unfounded). Nanay’s proposal is practical and simple in its essence: the history of cognitive science teaches us that investing animal cognition has often brought us interesting insights about humans – one of his examples being, quite ironically, given the context of this paper, discovering internal representations in rats by Tolman. It is tempting to go even deeper, denounce the zoocentrism of this approach, and call for explanatory *phytomorphism*, attributing to humans the mental states we begin to be finding in plants.

However, I believe that we need to first address the worry about the inevitable and inherent anthropomorphic starting point – and we need to address it head-on. We have to be on the lookout for what we bring to the table when interpreting and examining non-human animals and plants – luckily, the explanatory phytomorphism and zoomorphism paradigm is the best way to discover what this is. We could say that, ultimately, this is the idea of examining the deeper anthropomorphic assumptions behind the way we study our own minds and our own cognition; in order to be able to set them aside.

Two instant objections spring to mind. The first one is that this approach to COGNITION seems strongly anthropocentric – the way I presented it would seem that our ultimate goal is to explain cognition in humans, just as it always used to be in classic cognitive science, and that all the research on non-human animals, plants, and any other cognitive organisms is only an instrument to achieve this goal. It is well known, by now, in cognitive ethology, that this kind of anthropocentric attitude is often detrimental and stifles true scientific curiosity about other species (for brilliant methodological reflections on this topic see (De Waal 2017; De Waal, Ferrari 2010). To this first objection my answer will be twofold because the problem has at least two levels. The first level has to do with our scientific purposes, motivations, and focus – to put it simply, the reasons why we write the whole story, and which chapters interest us, ultimately, the most. As I already stated, the holism of the story-like understanding of COGNITION has to work both ways. We need the plant chapters to understand the human chapters, but we also need the human chapters to shed light on the plant chapters, put them into perspective.

From this point of view, humans are actually instrumental to finally get to know plants. Second, and this is the part of my answer that addresses the deeper level of the problem, this approach acknowledges that our perspective is inevitably anthropocentric. We cannot ever authentically and intuitively phytomorphize – had I been a plant, I probably would not be writing this paper right now. This, however, is also the reason why we need to examine our anthropomorphic assumptions, and in order to do so, it is necessary to also focus on human cognition. Again, we can think of research on human cognition as instrumental to discover what may be our deeper assumptions about the rest of the living world.

The second instant objection has to do with another old sin of traditional cognitive science: an assumption of linearity and the still prevalent way of speaking about human cognition as simply “superior”, “more advanced”, “more complex”, which also results in the tendency to seek out in other creatures some “primitive versions” of what we claim to possess, or only focusing on the development of certain capabilities we deem essentially human. The safeguard against this kind of linear ideas would be the strong emphasis on plurality and openness not only to similarities, but also to differences. The old, linear view was grounded in older, simplified views on evolution, and the fundamental changes in how we now understand the complex, both convergent and divergent processes are perhaps enough to help with this worry. There is, however, again a deeper danger which has to do with the Hegelian origin of the intuition that concepts such as COGNITION are stories. The danger is that the desire to build a holistic, coherent story will overshadow attention to any difficult, troublesome details that may feel out of place. It has often happened in philosophy, that an elegant, general, universal theory enticed authors to begin twisting facts to make them suit the perhaps oversimplified idea. A true Hegelian would even say that whatever does not suit our story, does not exist at all, which, if interpreted at face value, must sound abhorrent to an empirically-oriented reader. Moreover, if we take the Hegelian inspiration too literally, we might again fall into the trap of trying to build a linear story, forcibly seeking out dialectic triads in whatever empirical research we encounter. This is obviously not something anyone would want (not even a true Hegelian). There is no sure way to prevent this from happening – philosophers are naturally inclined to hunt conceptual patterns, to propose general views, and to synthesise, and this is what drives our project to write the story of COGNITION. We can only keep ourselves aware of the danger and treat any overly simple, general, too smooth explanations as a possible red flag. Our story has to be cohesive, but whenever it is turning out to be straightforward, perhaps we should pause and re-examine our anthropomorphic assumptions. As humans attempting to understand other creatures in a non-anthropomorphic way, we

should expect things to be difficult, not obviously coherent, and problematic for our deeply embedded psychological frameworks. Those difficulties can breed fuller understanding of them, and of ourselves.

In the second part of this paper, I would like to present an example of how my ideas about re-examining our deepest anthropomorphic assumptions in the light of the emerging research on plants can be put to work. I will be considering the brilliant, Fregean reconstruction of the structure of concepts proposed by Brandom (2009) as a toolkit that analytic philosophers possess and should have offered to cognitive scientists, including researchers of non-human cognition (who are explicitly mentioned numerous times throughout the paper). Brandom's story is not meant to recount the evolutionary development of cognitive powers - he unveils the logical and semantic structure of concept use, not its empirical history - but it has been developed with a view to guide empirical research on cognition. My goal is, therefore, obviously not to undermine the logical reconstruction with empirical arguments, but to bring out some of the deeply anthropomorphic elements and show how they can be given a broader, "phytomorphic" perspective.

3 Brandom's Logic of Concepts

Brandom's main thesis is that the ability to "use concepts" is complex. In fact, there are three main stages or levels of "concept using" that can be achieved (and Brandom credits mainly Frege with the discovery of those stages). The three stages are hierarchically structured - each one is a development of the previous ones and, as Brandom states, no individual could achieve a later stage without first completing the preceding ones. First, let me note that although Brandom refers specifically to concepts and not COGNITION in general (the paper was, no doubt, intended to help the debate on concept possession in animal cognition research), this does not confine us to more advanced forms of cognition in any way. Quite the contrary: we start our story with ways of interacting with the environment that are accessible to a chunk of iron. This makes Brandom's work a good candidate for a case study in meta-theoretical anthropomorphism in building our story of COGNITION, as it truly is meant to start "all the way down" (and go "all the way up").

We begin with the Aristotelian and Early Modern intuition that the essence of COGNITION is to classify. To get to know things is to know what categories they belong to. In this tradition, classifying is associated with constructing judgments of the shape "x is F", where x's were concrete, specific things and Fs were categories or general concepts. However, as Brandom observes, simple acts of classifying only require differential responsiveness, of which even a chunk

of iron is capable: it can 'distinguish' wet environments from non-wet ones by rusting in some of them and not in others. The next small step involves sentient awareness of the response and grouping those sentient responses into kinds, which means shifting from "sentience" to "sapience". This kind of categorizing, still deeply embedded in the Aristotelian tradition, has been seen as the essence not only of COGNITION, but of what constitutes a consciousness. Now, when we seem to get relatively advanced, comes the first big twist in our story: gaining the ability to not only label, but describe. To describe, putting it simply, is to be able to understand what the meaning of our categories is. The brilliant way of testing this is to build an implication, in which our judgment that "x is F" is the antecedent. "If 'x is F', then..." what? If we grasp, which consequences would be correct and which not, it means that we grasp the meaning of "F". Interestingly, Brandom's working example here is a parrot, which can be taught to label red things as red, but which, as he assumes, can't describe the empirical content of this concept, best defined as its inferential consequences. I will leave aside whether it is empirically true about parrots that they could not grasp, for example, that "If something is red, then it is not green", although it is in itself instructive how today, 14 years of intense research on non-human cognition later, an assumption that might have seemed obvious in 2009 may raise questions. According to Brandom, even if they are only labelling and not describing, we may still ascribe them the ability to use concepts, in order "not to be beastly to the beasts" (Brandom 2009). We just have to be careful not to confuse this ability with the more advanced forms of concept use. There is a suggestion here between the lines, that most experiments investigating categorization and concept use in non-humans are not differentiating those two levels of the ability to conceptualize clearly enough.

The next big step on our way is gaining the ability to distinguish the empirical content from the pragmatic force. Among the consequences of our conceptual classifications, there are not only inferential consequences expressing the content of our concepts, but also the pragmatic consequences of the very fact that a classification is made. The best way to distinguish those two kinds of consequences is, again, to embed simpler sentences as antecedents of conditionals. There is a difference in pragmatic force between things we assert ("This is red!") and the unasserted antecedent of a conditional (such as "If this is red, then...") or between "This is red" and "I suppose this is red". Our content becomes an ingredient, something that can be negated or otherwise manipulated to build more complex constructs. It is important for our purposes to grasp that this stage brings the ability to distance oneself from the empirical content, to adopt different epistemic attitudes toward it, and to use it reflexively.

The last stage involves creating complex concepts, Fregean functions, which grasp that what is invariant under substitution of some sentential components for others. Brandom encourages us to think of complex concepts as “patterns”, the essence of how the simple concept applies to its terms. The mechanism here seems technically and formally complex, but it is ultimately a reiteration of what happened at the previous stage: we gain the ability to manipulate the concept in an even more abstract way, introduce another dimension into our concept use.

4 **5a “Phytomorphic” Commentary on Brandom**

The first comment that springs to mind from the “phytomorphic” point of view is that this distinction of levels is actually not as helpful for researchers of simpler forms of cognition as we could hope. The “level one” ability of labelling is very simple, especially that we are given the example of an inanimate object also passing the “basic classifying” test. It is too general, given the diversity of creatures that could be ascribed this ability and all the different ways it is instantiated. However, Brandom himself offers us a way out: he makes it explicit that focusing on “classifying” as the essence of cognitive activity, is part of our philosophical heritage. This makes it exactly the kind of deep methodological anthropomorphism we should re-examine in the light of our budding knowledge of other creatures.

The traditional focus on classifying blinds us to a fascinating issue that might be explored with the help of what we have learned from empirical research on animal, plant, and uni- and multicellular forms cognition: who is doing the classifying. In our deep meta-theoretical anthropomorphism we automatically identify the agent engaging in cognition with the narrator of our COGNITION story. This may be partly why in Brandom’s story, we are dealing with clear-cut individuals, even in the case of the chunk of iron. The intuition that categorization is performed by a coherent individual belongs to our deeply anthropomorphic framework of understanding cognition. There is an implicit assumption of a strong border between a well-organized, coherent being, that encounters something in the external world and reacts to it as a whole. In the anthropomorphic view of cognition, there is always a stable “self”, even if we consider subpersonal processes or inanimate subjects.

The perfect way to challenge this assumption (and, in doing so, to understand it better) is to delve into the realm of plants. Although we tend to anthropomorphically see plants as similar to humans, highly centralized, possessing both tools for communicating with the environment and internal organs which are shielded from it, we already know that their modular structures and organs work quite differently.

As Parise and Marder (2023) emphasise, although plant modules have enough internal connections to allow for physiological coordination, each module is far more independent, also with respect to its communication with the external world, than in the case of animals. Parise and Marder emphasise that plants are much less isolated or even distinguishable from their environments than animals, as all their life takes place “on the surface” and involves “non-plant actors”. They could not qualify as a self even according to minimal conceptions, such as the body-self (Jékely et al. 2021), which is unified by reafferent sensing, neural control and morphology and enables the animal to act as a single, coherent unit. They have to be considered something tantalizingly “in-between”. They are sessile - but also in some cases capable of some coordinated movement. They often comprise parts that extend far into the environment or exist in two different realms at once, partly underground, and partly on the surface. They lack neural structures - but they have chemical ways of communicating, both internally and externally. In some cases, they may be considered a self in the sense proposed by (Levin 2019), who encourages us to demarcate “selves” “by a computational surface - the spatio-temporal boundary of events that it can measure, model, and try to affect”, which he imaginatively dubs “a cognitive light-cone”. Levin’s idea of “Scale-Free Cognition” allows us to see both a unicellular organism and a human society as individuals pursuing goals “at an appropriate level of scale and organization”. However, in case of plants, it would turn out that what we instinctively qualify as an individual plant does not always form a single “cognitive light-cone”. Parise and Marder even view plants as “nodes in the field of extended cognition which exceeds their embodied limits” (2023).

This glance into the complexities of plant “selves” is not intended to undermine the very idea that there is a “self” in cognition, or rather: that there has to be a coherent individual behind doing the classifying. It encourages us, however, to explore the different “selves” in cognition that may or may not be coextensive with what we intuitively pick out as individuals. In particular, this can change the philosophical understanding of human cognition, furthering several ideas already introduced by the proponents of the 4E paradigm, such as distributed cognition, and treating the whole body as a cognitive agent. Research on basal cognition encourages us to consider every cell in the human body as cognitive, and, although our internal structures are much more integrated than a plant’s, we may expect, following (Levin 2019), to find a multitude of “selves” in our cells and organs, as well as such “selves” that extend beyond human individuals, into the realm of institutions and societies.

This insight into the complexities of selves, including the human selves, may also shed light on the first big twist of concept use: the leap between labelling and describing. The example Brandom

chooses to explain this difference is not independent of certain background assumptions, or rather: of a traditional vision of the human self. Philosophers studying concepts traditionally tended to focus on acts of cognition that are relatively rare: acts performed by theoretically inclined beings whose interest in their surroundings is purely scientific. In philosophical accounts of concept use, there are subjects who judge whether something is “red” or “grivey”, but there is usually nothing immediately important about this issue. We might say that those subjects represent the most disengaged, theoretical version of the human “self” – which perhaps overshadows for philosophers the reality of our everyday, regular selves. In real life, it is extremely rare that we engage in categorizing things as red or non-red just for pure, cognitive fun (at least beyond the age of two). It is more common that we scan the environment for red things, because we need our red wallet. Or we check the colour of the lights to know if we can cross the road. Our mundane, embodied selves perform cognitive acts to satisfy their simple needs. Although many theories coming from the 4E paradigm have offered more task-oriented views of cognition, the idea that genuine human cognition involves building disengaged, abstract judgments seems to be still prevalent. At the core of Brandom’s reconstruction of the logic of concept use lies the idea of distance, the distance we can put between ourselves and the content we manipulate in increasingly abstract ways. It is important to notice that using the example of an abstract judgment, and not a simpler, task-oriented categorisation embedded in a concrete interaction with the environment is equivalent to introducing another, hidden step. For humans, the theoretical difference between simple but abstract judgments of colour and simple task-oriented judgments may seem negligible – but we should be more cautious when approaching non-human cognition.

If we try to search for disengaged, theoretically inclined selves in other animals or plants, we might indeed fail. Perhaps, despite my doubts, it turns out to be empirically true that a parrot could never grasp the concept of “red” at the level of describing and not purely labelling. However, if we consider the concept of “danger”, it is much easier to agree that a parrot can draw the required consequences. “If x is dangerous, x can harm me” – sounds like an implication many non-human animals could be capable of forming and understanding. My point here is not to make a direct empirical claim about parrots or any other animals (as Brandom surely was not making one) – rather, to show that sometimes deep anthropomorphising takes unusual forms. In this case, it lies in tacitly assuming a traditional philosophical view of the human “self” and overlooking a step on the way of distancing ourselves from contents.

There is another anthropomorphic idea entrenched in this reconstruction that requires attention: that of sentience. Brandom openly

wishes to abandon referring to “sentient awareness” as it is a concept that proved to be difficult to naturalize, preferring purely information-oriented accounts of reliable classificatory dispositions. The goal is to grasp how external stimuli elicit reliable classificatory responses. Putting aside the traditional concept of sentient awareness, however, does guarantee that we get rid of the general, implicit assumption behind it: that sentience is a uniform phenomenon. This assumption is reflected in the fact that on this account, we do not speak of any important differences between the ways certain stimuli are encoded. However, if Godfrey-Smith’s (2019; 2020) ideas about differences between sensory and evaluative consciousness or Veit’s (2023) reconstruction of the dimensions of consciousness are right, we could say that this view of sentience is actually anthropomorphic. In the case of humans, it happens that sentience involves both sensory perception and assessment in terms of value, tied together in an inextricable bond. According to authors such as Godfrey-Smith or Veit, different dimensions of consciousness have actually evolved independently. If this is so, it may be that classifying may also be performed differently by different organisms, and there is a whole range of different conceptual abilities to consider. This does not undermine the validity of Brandom’s logical reconstruction – but it does change how we view its empirical ramifications.

My final “phytomorphic” remark is an idea for future research, concerning the stage of cognition when we reach Brandom’s second “big twist” in conceptual abilities: distinguishing empirical content from pragmatic force. In the traditional approach, the ability to adopt different attitudes, epistemic and otherwise, towards content is connected to the emergence of subjective perspective. The ability to grasp the difference between the consequences of “If I believe that x is F, then...” and “If x is F, then...” brings the ability to understand that we have a unique epistemic perspective and that others may have a different one. Representationalists would claim that this stage involves the conscious manipulating of internal representations. I would call this the subjective dimension of human cognition, something traditionally oriented philosophers seem to strongly value and perceive as “genuinely” human. The capability to adopt different epistemic perspectives lies at the core of how we test for having Theory of Mind, which has become one of the main avenues of research in non-human mental abilities. Again, this picture is painted with a specific, background philosophical idea of a unified, coherent “self” with its single perspective and single subjectivity. I believe that research on simple organisms and plants with their radically different, public, and extended cognition can and should inspire our thinking about subjectivity not only in the direct way, in that it promises to present us with an evolutionary story of how subjectivity emerged and developed. It can also force us to reconsider how our own subjectivity truly works in our

own instances of extended cognition, and how we merge the private and public epistemic perspectives of our different selves.

5 Conclusion

The starting point of this paper was that, despite what may seem, human cognition is far more problematic for philosophy and cognitive science than applying COGNITION to simple organisms and plants. I propose to take on board the pluralistic and universalistic ideas about COGNITION offered in the recent subject literature – and use them to challenge, re-evaluate and deepen our understanding of traditional philosophical ideas about human cognition. I argue that there is a deep, meta-theoretical anthropomorphism in our theorizing about COGNITION which cannot be eliminated but can be fruitfully re-examined. This can only be achieved with the help of the insights gathered by researchers on non-human cognition. Building a holistic, coherent story of COGNITION entails that what we learn about plants makes us understand humans better, but in researching them, we cannot lose our assumptions about human cognition out of sight.

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