

Do Willows Really Weep? Cognition, Its Grammar, and the Problem of Pluralism Conceptual, Linguistic and Metascientific Disagreements in Recent Science

Filippo Batisti

Universidade Católica Portuguesa – CEFH Braga, Portugal

Abstract This paper will serve two functions. First, as a foreword to the other essays that compose this monographic issue of the journal. It will also provide a critical discussion on two major issues that emerged in the general. The first consists in seeing the philosophical outcomes of new developments in science through the lens of the language that is used to describe them. The second pertains to the metascientific level of the disagreement, as this new evidence challenges the established understanding of scientific practice and its philosophical foundations. The case of plant cognition will be examined in some detail to illustrate both issues.

Keywords Plant Cognition. Metaphilosophy. Ontological Turn. Pluralism. Philosophy of Mind.

Summary 1 Introduction. – 2 What Is At Stake? Framing the Disagreement. – 3 Science, Language, Interpretation. – 3.1 The Metascientific Argument. – 3.2 A Different Kind of Knowledge. – 4 Conclusion: Pluralism in Language, Pluralism in Science.



Edizioni
Ca' Foscari

Peer review

Submitted 2023-12-31
Accepted 2024-01-10
Published 2024-02-07

Open access

© 2023 Batisti |  4.0



Citation Batisti, F. (2023). "Do Willows Really Weep? Cognition, Its Grammar, and the Problem of Pluralism. Conceptual, Linguistic and Metascientific Disagreements in Recent Science". *JoLMA*, 4(2), 289-306.

DOI 10.30687/JoLma/2723-9640/2023/02/008

289

1 Introduction

This monographic issue of *JoLMA* collects seven engaging papers by authors who have quite different backgrounds. Nonetheless, they managed to provide readers with many reasons why philosophers who do not necessarily specialize in philosophy of mind should care about contemporary developments in the field. The main reason is that here we are dealing with a virtuous example of philosophy as a discipline having a two-way conversation with other sciences: a place where one can, and will, influence the other. While this issue has not attracted contributions from scholars in empirical sciences, my persuasion is that the papers that constitute it are readable and useful for that portion of audience, too. An example of this is the in-depth survey by Joy (this issue) on the notion of ‘self’ throughout several traditions between science and philosophy.

However, the strong philosophical core is represented by Figdor (this issue) and Colaço (this issue), who both tackle the fundamental question that inspired this collection: given that a relatively loose usage of ‘cognition’ is catching on in the empirical sciences, should philosophers hamper this trend – on the assumption that the extended usage has become too liberal and thus less informative? Or, rather, is this a good chance to rethink the original extension and intension of the notion,¹ putting under scrutiny another anthropocentric concept? This is indeed the connection Terragni and Cesaroni (this issue) make with ethical and political issues. It is not enough – they argue – to endorse a multi-species (or even one that includes non-animal entities) justice within the old anthropocentric construct of legal personality, to begin with. A change in ontological claims without a deeper revision of the actual structure remains merely cosmetic: asymmetries in power and social inequalities will persist untouched.

I – along with the two authors – believe that a discussion like this is motivated by philosophical insights, in its essence. Long-standing definitions are revised because strong interpretations are given of pieces of evidence. Sometimes the old definitions are defended. All that is ordinary philosophical negotiation. At the same time, a good part of it perfectly belongs to political theory. But what makes it even more interesting is that Terragni and Cesaroni speak directly to philosophy as they focus on the “risks in *theorizing*” (emphasis added). This is a case in which theory has a tangible reflection with worldly affairs. In other words, while philosophical reflection on non-human or ‘more-than-human’ rights and agency are key to a revision of societal inequalities, such as the environmental ones, an even more radical action is required to get us closer to an effective change in

¹ “Cognition” is, by definition, human cognition. Cf. Figdor 2021.

the state of things. At this point, according to the authors, the ball is back in philosophy's court.

Białek's paper (this issue) is situated precisely at this stage. Her metatheoretical reflection is surgical in making philosophers question how many layers of anthropocentrism are there when they write on these matters. Her provided answer is that even following the cognitive reading of nonhumans one should gain awareness of the presence of a deeper level of anthropomorphism in their theorizing. According to Białek, this presence is ineliminable: after all, we are human and our perspective as such cannot be erased for good – and it should not. However, our anthropomorphic core in *theoresis* does not invalidate our philosophical efforts of revising the relevant traditional notions. On the contrary, once it is acknowledged, there is room for fruitful investigations in cognition across humans and nonhumans.

Akin to Białek's and Terragni and Cesaroni's reflections, Raffaetà (this issue), an anthropologist, traces the origins of the environmentalization of the notion of 'intelligence' back to cybernetics, considered not only as an academic line of research, but also as a cultural movement borne out of a specific historical climate in the global West. In complementary resonance with Białek's caveats, she detects that the most recent de-humanizing trends in philosophy and other disciplines sometimes act as if adopting those environmental-oriented theoretical positions could make good on the more foundational Western approach to nonhumans. Which, to be clear, has been ultimately detrimental to what (or should I say 'who?') is not human. Raffaetà follows Povinelli (2021), according to whom a similar kind of blame could fall on an early advocate of a rethinking of the mind in ecological terms: Gregory Bateson. Similar operations are both not entirely honest with themselves with regard to the layers of anthropocentrism in which they are still immersed and, on the other hand, unaware of the cosmetic – that is, null – progress in material terms they allow for the nonhumans. Raffaetà's conclusion is that "ontoepistemological claims" (in a word, philosophizing) on the becoming of "cognition" toward its present environmental understanding "cannot be disentangled from sociopolitical and historical considerations". These theories are grounded in the way the West has been doing science and, in anthropological terms, how science has "decide[d]" what "to do with this alterity". The latter is at times the classic alterity between human communities, but includes the encounters with "more-than-human" entities, that prove to bring a kind of otherness just as "radical".

Along the same lines, Fizzarotti's contribution (this issue) shows that philosophical theories are in direct connection with their practical consequences when embedded into normative systems. That remains true for disruptive approaches to psychology like enactivism, which presents itself as a strong alternative to the hegemonic

disembodied cognitivism in the sciences of the mind. Enaction holds relational views of organisms in their environment and provides novel possibilities for developments in environmental and animal ethics. But, again, there are metatheoretical caveats to take into account if one aims at tangible changes.

2 What Is At Stake? Framing the Disagreement

All these papers display relevant connections in the sense highlighted so far. Namely, in a case like this, where the features of fundamental beings and entities with whom we share our same planet are discussed, come from and return to what happens outside of academia. Even abstracted conceptual dissections in the analytic style can provide crucial contributions. At the same time, the aforementioned approach to these questions cannot deceive itself into restricting its scope to an overly serious scholarly game of definitions – in fact, much that happens in philosophy today could be described in this way.

The papers in the issue also raise critical questions about how we are to frame those connections and the discussion itself. I will elaborate on two of those questions, namely, the linguistic aspect of the de-humanization of cognition and the metatheoretical conclusions that should derive, for example, in terms of theoretical pluralism. The two issues, I will argue, can be treated relatedly.

Figdor isolates the problem of pluralism: why can't people in cognitive science and philosophy be at peace with the fact that instances of cognition have been retrieved in non-animal systems? A clash in definitions seems inevitable, on these premises, in as much it is physiological. Given that our starting point to study the mind is our human mind, it is hardly surprising that claims about cognitive processes in plants or bacteria easily sound, at first, as categorial errors, pure and simple. It is worthy noting that the choice of human cognition as the origin for the definition of cognition need not necessarily be, even though good reasons in favour of the intra-species studies are, one could say, self-evident: the advantages, for instance, of relying on linguistic reports from studied subjects are clear.

This is also the sense in which this monographic issue concerns the “de-humanization” of cognition. Again, cognition, historically, started out as human cognition. It is only in relatively recent times that more and more scientists have started using cognitive terms – that is, terms that implied an original reference to something happening in a human person – in non-conventional ways (Figdor 2018, uses the expression “unexpected domains”). I use “non-conventional” to express the same idea: that *conventionally* nobody, and scientists in particular, would say that bacteria or plants ‘prefer’ without being metaphorical, hyperbolic, ironic, informal, etc. This can be said in as

much as word meaning is believed to work through conventions. So, the linguistic aspect both informs and reflects the views on theory.

A further step is wondering whether proponents of the cognitive features of, say, plants do that because they hold a strong claim of continuity² between human minds and plant minds and, thus, aim at pooling both kinds of mind in one group. Or, rather than ‘one’ group, the *only* group that there should be: single cognitive capacities that can come in different ‘mind packs’, that is, depending on the species. Alternatively, the proponents could be pursuing a ‘honorific’ (see Colaço, this issue) conclusion: calling a phenomenon that is traditionally considered not cognitive ‘cognitive’ is a catchy way of drawing attention to it, for the sake of discussion. In the end, we might be facing a liberal use of words that turns out to be metaphorical.³

A problem is that it is not always, or even not often, clear which of the two strategies⁴ the proponents are adopting. ‘Massive’ ambiguity defines the field, according to Fidgor. That blocks answers with regard to talk of pluralism in the study of cognition, as a state of pluralism “implies that different investigative orientations can co-exist in relative peace for the most part” (Fidgor, this issue). Instead, the status of non-traditional uses of ‘cognition’ is hybrid, at the moment, as is its desirability. One, I argue, could ask oneself how strong of an interest have people in plant cognition toward well-supported claims with regard to receiving (or taking for themselves) the label of ‘cognitive’ in the traditional sense. One could wonder how important that achievement would be, and for what reasons. It might not be such at all, as the ‘honorific’ interpreters seem to claim. Still, those unconventional usages abound. To dismiss them as either a mere self-branding strategy or an incautious treatment of loaded philosophical terms could be close to the truth in sporadic cases,⁵ but leave something important out of the picture.

2 The continuity can be interpreted as functional, under the classical functionalist framework in the philosophy of mind: cognitive is what cognition does, in a slogan. Otherwise, one can defend stronger versions of the continuity that imply an ontological commonality in the physical support among different kinds of mind. This characterization is distinct from the one presented after, even though they overlap.

3 With regard to the differences between metaphorical and literal interpretations, I refer to Figdor 2018, as she writes: “When Das Gupta et al. (2014) write that fruit flies *decide*, and when Hubel and Wiesel (1962) write that neurons *prefer*, a popular initial response to these unexpected uses is that they are intended metaphorically. The Metaphor view claims that the uses make sense [...] but aren’t literal”. An illustrious antecedent is Sellars (1991, 12), who defines “a metaphorical extension of the term” ‘habit’ the description of an earthworm’s behaviour within a lab experiment, on the semantic premise that it is humans that have such a thing as a habit.

4 To clarify, I am not hereby claiming that these two options are the only possible ones.

5 Machery (2020, 682-3) seems to suggest that, even though this is not a central point among his remarks. Traditional plant biologists make that point more often (see section 3.1).

So, why do the de-humanizers of cognition walk down the comparative road? Let's consider Legrenzi's (2023) framing of the situation. Since it comes from a sideways place (the author is not involved in this kind of research but shares one problem with it), I find it useful for the sake of discussion. There, the disagreement is put in terms of reductionist versus non-reductionist approach to the matter. The first position considers only the animal mind to be a *mind*. This view is reductionist in so far as it automatically discards diverging ones as forms of unscientific thinking: metaphorical at best, or, in the worst case, even magical. For instance, Bianchi and Castiello (2023, 349) suggest that the insistence on calling plants "intelligent" and some of their capacities "cognitive" is to be interpreted as a reaction to what Legrenzi calls the a priori reductionist view. A sort of bidding war, I may add.

Being an expert in the psychology of economics, Legrenzi observes that such a rigid dismissal seems not to be elicited in the case of entities like the stock markets, to which (or should one say 'whom?') are attributed properly cognitive features, like memory, learning, adaptation to stimuli, or even the expression of a 'sentiment'. Why does an undoubtedly loose application of folk psychology concepts like that go unnoticed? Legrenzi's answer is anthropological: we, as a species, do not feel threatened by the attribution of psychological powers to entities like markets – perhaps because laypeople do not understand them enough, if at all. Plants, on the other hand, are way more familiar in everyone's experience. For this reason, the differences with animals that have brains and, arguably, minds, are clear, and we want them to remain so.

I take these notes to allow a conclusion that may sound paradoxical. Even though – as Legrenzi reports – the naïve epistemology used to refer to the behaviour of stock markets is very much real for experts, its liberal use of a psychological lexicon is considered acceptable. On the contrary, caution is generally advised when it comes to plants. I would like to add another reason for this attitude. Since markets are ill-defined, abstract, unpredictable entities even for those who make a living out of them, the use of cognition-related terms is more easily considered metaphorical – or non-literal anyway. Perhaps, using metaphors is a desperate attempt to grasp some sort of understanding of these strange beasts. The same lexical and conceptual application to plants are immediately interpreted as serious proposals, in most cases. I mean that both in the academic usage and in the everyday one, such as when parents teach children not to sever flowers because "they would feel pain". An argument that usually wins the empathic reactions of children.

However, one of my first encounters with the topic (Gagliano 2022) represents a case that complicates my own conclusion in this respect.

3 Science, Language, Interpretation

For a novice of the unconventional views on plants, Gagliano's book, can be described as unsettling. I use this adjective as a *vox media*. In reading, I was upset as much as I was challenged in my views. Steadfast in a disenchanting view of the history of science – according to which discoveries, ideas and innovations in their scientific and intellectual merit are often the product of personal histories and multifarious contingencies around the people who made them – I was far from expecting some cold analytic treatise, embellished by a handful of anecdotes, as it often happens with books that try to popularize academic findings in the least unengaging way.⁶ However, the complete easiness displayed by Gagliano in telling her story of a (struggling) scientist being inspired by plants, did exceed my expectations. More precisely, its most notable feature is the continuity between the explanations of ideas, experiments and results on the one hand and, on the other, the recounting of how some specific trees, for instance, talked to Gagliano (2018, Chapter O; 2022, 38-41) guiding her research, sometimes acting as prophets – or, rather, as academic supervisors. This striking unapologetic attitude cannot but elicit reactions in every audience. The narrative dimension of the book – replicated in interviews and other loci – is simultaneously so far-fetched and yet so genuine that the academic reader has a hard time presenting the two-way dilemma that one should expect at that point: either relegate such a narrative to a sugary, obnoxious “magical realist” dimension (cf. Legrenzi 2023, 406), or just embrace it without reservations.

Gagliano proves to be above and beyond a similar scientific ideology. While in many pages my first reaction was to pop my eyes out in disbelief in front of the odd mixture of fascinating laboratory experiments (that became peer-reviewed scientific articles) and soul-changing trips on the trail of future-forecasting talking plants, I concluded that a harsh dismissal would have been uncharitable and underwhelming on my part. At the same time, I find it very reasonable to methodologically separate the scientific merit of findings on the behaviour of plants from the narrative around it. A truism I find useful as a remainder is that the vast majority of scientists who eschew similar personal considerations and tales from their scientific writings still have them, as science never happens in a void, being,

⁶ Castiello's (2019) introduction to *Vegetal Psychology* for the Italian audience is a good example of a very useful book written in a very different way. It reports analytically a fair deal of contemporary research on the topic, including the reports of some disagreements, and offers only a few deviations from its introductory objectives. Despite aspiring to be a “neutral” first book on plant cognition, as its language is well-balanced and essential, its very existence and some choices are very much the embodiment of a stance that is not obvious to take. I will return to this book's linguistic choices later.

rather, a situated human endeavor (cf. Raffaetà, this issue).

While I contend that Gagliano's approach breaks down the dichotomic framing of the disagreement, there are indeed people sitting on the opposite side. Several articles report forceful and total opposition to the very idea that plants can be cognitive (to only name a couple of recent ones, Robinson, Draguhn 2021; Mallat et al. 2021). So, in accordance with Legrenzi's insight, there is indeed polarization. Now I wish to delve into an additional reason that might explain why this is the case. Let's consider a pilot study (Khattar et al. 2022) that, despite some limitations, tried to gauge the sentiment about plant cognition between academics in natural and social sciences. An important axis was the correlation to resorting to "Traditional Knowledge", i.e. indigenous and usually non-Western and/or non-academic systems of belief and knowledge, and the propensity to talk about plant intelligence. As expected, the correlation was positive.

This connection is crucial. Gagliano's experiences as a (Western) scientist are telling in this respect. The negative gut feeling toward talk of plant cognition can be explained in terms of a dilemma. If one finds themselves readily accepting those views on how minds are to be found in unexpected places, on further consideration it may feel like renouncing a long-standing tradition in our intellectual canon. That feeling can be worrying, too. This is probably what happens when one is involved in first-person in a change of *Weltanschauung*. On this interpretation of the disagreement, the fine-grained scholarly discussions may end up appearing stale, even though they are indeed what caused the switch. An average skeptic academic cannot renounce a fair amount of detailed evidence to let the "conversion" process in their own belief system begin. One perhaps all too easily relativistic slope is facilitated by the Traditional Knowledge correlation: many would feel to be renouncing Western science as they know it, conferring a negative connotation to a similar outcome. For instance, Gagliano (2018, Chapter Y) herself reports episodes of easily-spoken dismissive skepticism toward her ideas and hypotheses - before they received considerable funding.

In other words, I am suggesting a two-fold observation.

One way to describe the situation is the following. There is a two-way movement between the discussion of the scientific merit of an issue (e.g., "can plants have cognition?") and the fact that it touches sensitive spots in scientific self-constructions of scholars *as scholars*.

Another closely connected way to put it is to claim that it seems that accepting plant cognition - or other related issues, like nonhuman agency (Kohn 2013) or the intelligence of materials (Tripaldi 2022) - equals or leads to renouncing one or more pillars of Western science and philosophy. This worry can emerge more or less explicitly.

I will now expand on both aspects of the observation across the following two paragraphs.

3.1 The Metascientific Argument

Alpi et al. (2007), in a very short critical note, signed by 33 botanists and biologists affiliated with more than 20 European and North American institutions, admit the heuristic value of talking about “plant neurobiology”, while strongly suggesting that the provocative label had outlived its usefulness. After a dozen years, Mallat et al. (2021), after a step-by-step refutation of 12 claims in favour of plant consciousness found in the work of “a vocal handful of botanists”, conclude by mentioning the risk that “young, *aspiring plant biologists*” (emphasis in the original) could be fed “mistaken ideas” about the state of the art of plant biology. A dangerous outcome to the future of the discipline itself, “because dubious ideas about plant consciousness can harm this scientific discipline”. Two institutional corollaries are equally denounced.

Namely, a restrictive turn in research regulation in light of the alleged conscious experience, a notion that could attract more funding from agencies by virtue of its “strong, romantic appeal”. Robinson, Draguhn, Taiz (2020) lament a decade of efforts directed towards the separation of “fact from fiction” with regard to the more extreme claims of “neurobiologists”: they argue “that there is no solid scientific evidence to support the claims that plants possess neurons or have the equivalent of a brain, feel pain or contain a memory” (Robinson, Draguhn, Taiz 2020). In a direct response, Baluška and Mancuso (2020) turn over the accusation of being unscientific to their critics. The latter are accused of ignoring evidence, using straw-man arguments, resorting to non-peer-reviewed journals to offer methodological critiques, and – finally – of being dogmatic as they refute new ideas *a priori* on purely terminological grounds. The last issue will be addressed in greater detail below.

The importance of this brief give-and-take between prominent representatives of the opposing camps is not to be exaggerated in how much it tells about the nature of the contemporary debate, whereas Taiz et al. (2019) offer some more placid yet intriguing observations for the present discussion. There, the authors group some different kinds of arguments against the ‘neurobiological’ trend. Some are lexical and revolve around the loose definitions of concepts like ‘intelligence’, ‘cognition’ or ‘learning’.⁷ Taiz and colleagues are hostile to the extended interpretation of the aforementioned concepts, but care to underline that they hold a restrictive view because there is no (conclusive) empirical evidence for a conceptual revision.

⁷ An anonymous reviewer asks to provide an example of the loose definition. Gagliano et al. (2014, mentioned in Gagliano 2022 as well) experiment on *Mimosa pudica* described as “remembering” fits the scope.

The most “provocative [and] controversial” view – championed by Gagliano – is the attribution of consciousness, including feelings, to plants. This hypothesis is presented as something that does not follow and is not warranted from the experimental work – and neither necessary to support its conclusions. Gagliano (2017) says that plants display “a subjective system of feelings and experience”. Taiz’s group describes an attitude like hers in two ways. At first, they explain it in terms of poetic and metaphorical thinking. Then, more interestingly, they try to make sense of it in a more rationalizing way by tracing its roots back to an “ethical perspective [that] permeates [the] intellectual foundation” (Taiz et al. 2019, 685-6) of plant neurobiology, which they also describe as a “new wave of Romantic biology”. They quote Gagliano (2017) stating that growing “experimental evidence for the cognitive capacities of plants” makes it more urgent to deal with “the controversial (or even taboo) topic regarding [plant’s] welfare and moral standing”. She concludes by expressing the conviction that “our ethical responsibility toward them can no longer be ignored”. Taiz and colleagues claim to share every concern about the grave decline that the Earth’s environment is undergoing nowadays, for instance in terms of loss of biodiversity. Nonetheless, they “strongly object to the implications that plant consciousness, intentionality, and cognition are moral or ethical questions. A scientific understanding of nature requires only that we seek the truth” (Taiz et al. 2019, 686).⁸

Three comments on this opinion article should be made.

Firstly, it seems clear enough that the rationalizing spirit of the second interpretation aspires to be a charitable one, even though both interpretations lead to the same unfavourable conclusion. According to Taiz and colleagues, that kind of science is not rigorous and, as a consequence, should be disregarded or, alternatively, called philosophy, or poetry. Let me try to schematize. Unwarranted analogies, inventive thinking, inconclusive evidence: these are the ingredients of plant neurobiology, on to the Uncharitable Interpretation (UCI). As such, they lead to bad science. The Charitable Interpretation (CI), instead, sees bad science as “inspired” by “justifiable” concerns that are ethical in nature. In other words, CI interprets scholars insisting on plants’ cognitive abilities as striving to find a widely convincing argument for better treatment of plants on a mass scale, in the wake of the studies on animal cognition and animal ethics (cf. Trewavas et al. 2020). The argument, of course, is thought to be more convincing because it is presented as “scientifically-proven

⁸ For the sake of clarity, Taiz and colleagues stick to the standard view that consciousness in *animals* is most likely granted by their brain and nervous system. Since plants lack these two, they must lack consciousness as well.

evidence”, and not as a naïve fantasy.⁹ In other words, from a critical standpoint, it is charitable to interpret unscientific-sounding claims as justified by reasonable beliefs (in this case, a preoccupation), albeit of a different nature, whereas the uncharitable attitude does not admit such claims as acceptable despite their noble motivation.

Secondly, there seems to be an inversion in the argument reconstruction. Taiz and colleagues describe the plant neurobiologists as “inspired” by an ethical thrust. The quote taken from Gagliano (2017) they use to confirm their diagnosis, however, says the opposite: it is *from* scientific evidence (i.e. the belief in the discovery that plants are cognitive and/or conscious) that a set of subsequent ethical preoccupations arises. Of course, the critics may well be consciously interpreting the words of their target in a less literal way and I admit that would not invalidate their critique. However, the inverted reconstruction can come across as inaccurate.

Thirdly, the final line of the paper sounds somewhat scary and leaves the door open to the kind of metascientific arguments advanced by Gagliano and others (see the remarks in Baluška; Mancuso 2020). If for Taiz and colleagues the statement that the only way of understanding nature in a scientific way is “to seek the truth” sounds like a good supporting argument, then we must interpret them as implying that the state of the art in plant biology cannot benefit *a priori* of *anything* different from what is already in place. To say nothing of the circularity with which the truth-seeking prescription is imbued: it seems that to comply with the investigation of truth one must limit themselves to the truth only. This would end up ruling out the very essence of scientific reasoning and practice, namely being open to revise truths, wherever evidence suggests to do so. However, it would be unfair – uncharitable, indeed – to limit us to the literal critique of an unfortunate wording. It is clear that what Taiz meant is different and worthier of discussion, namely that they think that those particular innovative and ambitious working assumptions have proven to be both ill-conceived and unable to deliver sufficiently convincing evidence.

⁹ In this picture, I believe that the CI differs from the Mere Honorific Conclusion illustrated by Colaço (2023, this issue), since MHC is defined as follows: calling something “cognitive” in order to render it “worthy of philosophical and scientific investigation”. Here, instead, the point to be made is different. According to CI, calling plants “cognitive” does not meet the criteria of scientific reasoning. On the contrary, Taiz et al. (2019) distinguish between a scientific *versus* a philosophical approach to plant biology. Moreover, CI interprets plant neurobiologists as “merely honoring” plants with possessing cognitive abilities not as much as a somewhat deceptive argumentative tool to bring forth an urgent scientific and real-world agenda (namely, plant welfare, ecological preservation, etc.). I must specify that, with all this, I do not necessarily entail that Colaço’s original characterization implied the contrast I presented here between being “merely honorific” and “urgently deceptive”.

3.2 A Different Kind of Knowledge

To continue the exploration of the nature of the previous two-fold observation,¹⁰ I will now consider a different set of arguments that, in the end, will prove relevant to both dimensions, namely the scientific and the metatheoretical ones.

The so-called Ontological Turn (OT henceforth) has created interest and attracted critiques across anthropology and philosophy in the last 15 years or so. I do not think that the consonances between the OT and the de-humanizing issues about mental properties discussed here are casual. Let me explain why.

Highly seductive just as much as it is contested (Ramos 2012; Brigati 2021), the OT advocates in favour of a change in the ethnographic practice, with reverberations in the production of anthropological knowledge. This is supposed to happen by means of a conceptual change in the interpretation of ethnographic data. The general premise is that anthropology should move away from its original objectifying attitude toward the people being studied. Viveiros de Castro, one of the better-known proponents, makes this prescription fall under a process of “a permanent decolonisation of thought” (Viveiros de Castro 2016, 75; Colajanni 2021, 13). To avoid a discussion of the loaded term “decolonisation”, it will suffice to say that this need is part of a general trend in the discipline that recognizes that describing different cultures from an ideally impersonal vantage point – the one occupied by the ethnographer – is a method that leaves much out of the picture. In so doing, it exacerbates the “ventriloquist” posture that reports the thought of the studied people as if they could not talk themselves and use their own words to mean what they want to mean. One methodological remedy for the ethnographer is to “take seriously” what they are told and try not to impose their own categories on the native ones. So, the desired reduction of distance between the observer and the observed is meant to stem from a different attitude toward the latter’s statements.

Thus, taking to further and radical lengths Wittgenstein’s critique of Frazer (2018), the anthropologist is invited to take literally even the strangest reports received from informants. On this view, then, *A* saying that *p*, where *p*, for instance, consists in “*x* is *y*”, is *not* – from the interpreter’s standpoint – a rhetorical device (usually, a metaphor) used by *A* to say *q*, that, in turn, could consist in “*x* is *z*”. *A* really intends to say *p*.

Failure to recognize (or accept) this leads to a two-fold undesirable outcome. Firstly, one commits an error in conducting good ethnography, ending up crushing the native categories of thought into one’s

¹⁰ See section 3.

own. Secondly, I may add, not interpreting them as saying p despite the fact that they are saying p and reporting them as saying q – that is, giving them a voice through research products – amounts to committing discursive injustice (Kukla 2014; Bianchi 2021).¹¹

Now, can this paradigm be useful to address the problems around the mind of, for instance, plants? The idea is worth exploring and two paths can be walked to do so. The perspectivist interpretative scheme could be applied to the specific content of de-humanized science as well as its metascientific approach.

Taking a step aside from OT, discussions like the one between Figdor (2020) and Machery (2020) are attempts at making sense of both the intentions of scientists and the fact of the matter. Said differently, the first question is “are scientists saying that, e.g., plants have minds because they mean it literally or not?” and the second question is “despite what their ideas are and whether they use quotes or not, is there a merit to the proposed notion?”. Given the framing I gave to the problem, it seems to me that their disagreement may be helped (but not dissolved) by the acknowledgment that they are conflating the two questions. Machery (2020, 683) reproaches Figdor’s alleged assumption that scientists in the field have a somewhat monolithic attitude toward the de-humanization of cognition issue. From such an assumption derives her literalist view, according to which “psychological predicates are being used to pick out the same scientifically-discovered structures across the relevant human and non-human domains” (Figdor 2018, 61). However, the tendency of both is to study the issue with an initial skimming of factors that are perceived as external to the fact of the matter (see the parts on rhetorical exaggerations in both papers). It is on those grounds that their disagreement between literalist versus polysemic interpretations of the language used in scientific papers of others is built.

I argue that this analytic way of making sense of the phenomenon may leave out something. Let us consider Gagliano’s work once more. Taiz and colleagues criticize her statement for what concerns the fact of the matter (there is no evidence in support of the statement that plants, e.g., are conscious beings), but simultaneously they do not take similar claims seriously by suggesting that, after all, they are “really” motivated by ethical concerns. Thus, the “real” agenda of plant neurobiology is reducible to putting forward a reconsideration of the moral status of plants. However, on both levels, what Gagliano

11 I take this case to be describable both in terms of discursive injustice (the native informant is blocked from being taken seriously and systematically interpreted as saying something different than what is said, thus is being illocutionarily disabled) and epistemic injustice (the native informant is getting systematically misrepresented in their system of belief and mode of knowledge production). However, this is not the place to elaborate on this point.

(and others) do, according to the critics, does not belong to science.

Let us now ‘take seriously’ Gagliano’s (2022) perspective in her own words, starting with the metascientific level. When she tells us that plants, rather than “inspiring” her work (as Taiz et al. say), “provide instructions” on how to conduct experiments on plants (sometimes, on different plants than the ones who do the talking),¹² we probably should not interpret her as speaking metaphorically. In effect, there is nothing that explicitly induces such a reading. What is striking is the fact that these unapologetic reports of extra-scientific episodes are followed in a continuous flow by lab experiments published in peer-reviewed biology journals (Gagliano et al. 2017). At this point, a crucial question arises: how much influenced by these anecdotes should a “serious” reading of Gagliano’s cognitive predicates with regard to plants be? Does the fact of the matter consist in propositions that belong to something different than Western science? In her own words, Gagliano believes that academic training in science is of fundamental importance; nonetheless, it is too narrow-minded and needs to be augmented with different means of inquiry.¹³ In fact, Gagliano explicitly draws on traditional knowledge, to be found in Aboriginal Australian, Amazonian, North American indigenous communities. Not only theoretically, but also practically: one of the pillars of the book are the actual encounters with shamans and plants. According to the author, first-hand experience is the only measure of the value of these deviations from standard scientific practice learned in Western academia.¹⁴

At the same time, Gagliano does not limit herself to proposing a simplistic substitution of Western science with traditional ways of producing knowledge and its practical application – something similar would be uninteresting as much as limited. She argues, instead,

12 Consider this passage, for example: “By juxtaposing the apprentice shaman, wide open to the darkness of a Shipibo *maloka* in a defiant wilderness, with the Western scientist locked under the brightness of fluorescent lights in an off-limits controlled-environment laboratory, nature had found a way to integrate and unify the two worldviews. Guided by the plants, the scientist learned to think out and away from the conventional box that measured current scientific precincts, while the shaman inspired an entirely new vision” (Gagliano 2018, Chapter O).

13 An anonymous reviewer recommends Levy and Godfrey-Smith 2021 and Longino 1990 as instances of reflection about ways to integrate scientific training with imagination and other humanistic-inclined forms of reasoning. I gladly welcome these suggestions and add Batisti (forthcoming) to the list, a commentary on epistemological pluralism and the rethinking of scientific objectivity.

14 “I felt so naïve and, at the same time, so hideously parochial about the fact that my beliefs and perceptions of the world were tinted by the stinky old anthropocentric bias, despite the amazing experiences I’d had that had taught me otherwise” (Gagliano 2018, Chapter N; 2022, 101).

for an integration.¹⁵ For instance, she warns against an unnecessary idealization of traditional indigenous cultures, just after stating that healers and shamans all over the world “have been learning the songs of plants as a way of communicating with these other-than-human persons and acknowledging them as the guarantors of human existence, the true philanthropists of the world” (Gagliano 2018, Chapter R; 2022, 44-6). The devaluation of “plants and the traditional knowledge of them” is then denounced as a form of “agro-scientific capitalism” where extractivist business supports and is supported by the conviction of the superiority of Western knowledge over what they conveniently consider as “unsubstantiated and fanciful belief system[s]”. Gagliano finally wonders: “What if the claims of traditional knowledge were indeed put to the test and these ‘beliefs’ substantiated by a Western scientific model?” Would we discover some “‘truth’ emerging at the interface between these two bodies of knowledge”?

4 Conclusion: Pluralism in Language, Pluralism in Science

From the application of a - loosely defined - perspectivist analytical lens to the de-humanization of cognition in plants it has emerged that one needs to ask both of the two questions: one about the merits of the proposal and one about the kind of science (or knowledge) that is being done in that context. In this essay I have highlighted that rebuttals such as Taiz et al.’s (2019) do address them both, but in a disordered way. On the other hand, important analyses (Figdor 2018) and their friendly critiques (Machery 2020) do something similar even if they don’t express themselves on the merits of the scientific truths discussed by the de-humanizers of cognition. Let us consider briefly Machery’s counterproposal to Figdor’s literalism, namely polysemy. His view holds that stating that plants have cognition only adds new meanings to the term ‘cognition’, without supplanting the previous one(s). Now, does such an analysis allow for - or literally consist in - some kind of pluralism? Does semantic pluralism entail a metascientific pluralism, if we want to give room to the worry of Robinson, Draghun, and Taiz about the fact that accepting the validity of plant neurobiology leads to a renounce of Western science as we know it? This is not the occasion to provide an answer, but with

15 In criticizing the widespread biotechnological programs as they treat plants as “inert objects”, Gagliano (2018, Chapter A; 2022, 145-6) claims that such a view is unsupported by evidence: “the scientific method demands us to rectify our approach by de-objectifying plants and no longer granting scientific legitimacy to G[enetically] M[odified] plant research”, in light of the “growing plethora of scientific evidence demonstrating that plants are highly sensitive living organisms”.

this question I wish to make clearer how the grammatical issue is related to the metascientific one and answering one without answering the other amounts to a limited interpretation of this trend in philosophy and science.

It may well be that in some, easier cases the two aspects can be separated without harm. Castiello's (2019) introduction, for example, seems quite unproblematic, thanks to the extensive use of "scare quotes" when attributing cognitive predicates to unconventional vegetal recipients (cf. Figdor 2020 on scare quotes). That remains true even on a closer analysis that shows that Castiello does use scare quotes, but mostly for focal concepts and does not in longer sentences – probably for stylistic reasons, i.e. to increase the readability of the text.

However, I have shown how in more complex cases, like Gagliano's research as well as its critiques, the two levels – scientific and metascientific – are interwoven and in a reciprocal influence. Therefore, they should be taken into separate consideration. When asking whether plants, neurons, bacteria, or even financial markets have minds, or pieces of it, one should ask what kind of knowledge is being discussed in that context. Likewise, discussions about the differences and possible integrations between Western science and traditional knowledge need to be based on fact-of-the-matter grounds. Finally, this paper was meant to serve as a non-dogmatic and yet critical way to react to the bewilderment that philosophers, scientists, and the general public can feel when confronted with similar provoking pieces of contemporary research.

References

- Alpi, A. et al. (2007). "Plant Neurobiology: No brain, No Gain?". *Trends in Plant Science*, 12(4), 135-6.
- Baluška, F.; Mancuso, S. (2020). "Plants Are Alive: With All Behavioural and Cognitive Consequences". *EMBO Reports*, 21(5), e50495.
- Batisti, F. (forthcoming). "I punti di vista al centro della scienza. La standt point theory tra relativismo e pluralismo delle epistemologie". Cannizzo, S.; Melito, B.; Montesi, F. (a cura di), *Dispersersi. Una ricognizione sulla crisi dell'io*. Naples: IISF Press.
- Bialek, M. (2023). "Extending the Concept of Cognition and Meta-Theoretical Anthropomorphism". *The Journal for the Philosophy of Language, Mind, and the Arts*, 4(2), 271-88.
- Bianchi, C. (2021). "Discursive Injustice: The Role of Uptake". *Topoi*, 40, 181-90.
- Bianchi, M.; Castiello, U. (2023). "Il concetto di rappresentazione nelle scienze cognitive classiche e post-classiche. La sfida della cognizione vegetale". *Giornale italiano di psicologia*, 2, 349-85.
- Brigati, R. (2021). "Antropologia e rappresentazionalismo. Note genealogiche". *Dei*, Quarta 2021, 63-103.
- Brigati, R.; Gamberi, V. (a cura di) (2019). *Metamorfosi. La svolta ontologica in antropologia*. Macerata: Quodlibet.

- Castiello, U. (2019). *La mente delle piante. Introduzione alla psicologia vegetale*. Bologna: il Mulino.
- Colaço, D. (2023). “Connecting Unconventional Cognition to Humans. Unification and Generativity”. *The Journal for the Philosophy of Language, Mind, and the Arts*, 4(2), 163-78.
- Colajanni, A. (2021). “Il ‘prospettivismo’ e la ‘svolta ontologica’ nelle discussioni e nei commenti italiani: gli antropologi e i filosofi”. *Dei*, Quarta 2021, 13-61.
- Dei, F.; Quarta, L. (a cura di) (2021). *Sulla svolta ontologica. Prospettive e rappresentazioni tra antropologia e filosofia*. Roma: Meltemi.
- Figdor, C. (2018). *Pieces of Mind. The Proper Domain of Psychological Predicates*. Oxford: Oxford University Press.
- Figdor, C. (2020). “Why Literalism is Still the Best Game in Town: Replies to Drayson, Machery, and Schwitzgebel”. *Mind & Language*, 35, 687-93.
- Figdor, C. (2023). “What Are We Talking About When We Talk About Cognition?: Human, Cybernetic, and Phylogenetic Conceptual Schemes”. *The Journal for the Philosophy of Language, Mind, and the Arts*, 4(2), 149-62.
- Fizzarotti, C. (2023). “The Consequences of Enactivism on Moral Considerability in Environmental Ethics”. *The Journal for the Philosophy of Language, Mind, and the Arts*, 4(2), 221-42.
- Gagliano, M. (2017) “The Mind of Plants: Thinking the Unthinkable”. *Communicative & Integrative Biology*, 10, e1288333.
- Gagliano, M. (2018). *Thus Spoke the Plant: A Remarkable Journey of Groundbreaking Scientific Discoveries and Personal Encounters with Plants*. Berkley: North Atlantic Books.
- Gagliano, M. (2022) *Così parlo la pianta. Un viaggio straordinario tra scoperte e scientifiche e incontri personali con le piante*. Transl. by A. Castellazzi. Milan: Nottetempo. Italian transl. of: *Thus Spoke the Plant: A Remarkable Journey of Groundbreaking Scientific Discoveries and Personal Encounters With Plants*. Berkley: North Atlantic Books, 2018.
- Gagliano M.; Renton, M.; Depczynski, M.; Mancuso, S. (2014). “Experience Teaches Plants To Learn Faster and Forget Slower in Environments Where It Matters”. *Oecologia*, 175(1), 63-72.
- Gagliano, M.; Grimonprez, M.; Depczynski, M.; Renton, M. (2017). “Tuned In: Plant Roots Use Sound to Locate Water”. *Oecologia*, 184, 151-60.
- Joy, R. (2023). “On the Genesis, Continuum, and the Lowest Bound of Selves”. *The Journal for the Philosophy of Language, Mind, and the Arts*, 4(2), 243-70.
- Khattar, J.; Calvo, P.; Vandebroek, I.; Pandolfi, C.; Dahdouh-Guebas, F. (2022). “Understanding Interdisciplinary Perspectives of Plant Intelligence: Is It a Matter of Science, Language, or Subjectivity?”. *Journal of Ethnobiology and Ethnomedicine*, 41(18). <https://ethnobiomed.biomedcentral.com/articles/10.1186/s13002-022-00539-3#citeas>.
- Kohn, E. (2013). *How Forests Think: Toward an Anthropology Beyond the Human*. Berkeley: University of California Press.
- Kukla, R. (2014). “Performative Force, Convention, and Discursive Injustice”. *Hypatia*, 29(2), 440-57.
- Legrenzi, P. (2023). “L’epistemologia ingenua della cognizione vegetale e delle entità artificiali”. *Giornale italiano di psicologia*, 2, 405-10.
- Levy, A.; Godfrey-Smith, P. (eds) (2021). *The Scientific Imagination*. Oxford: Oxford University Press.
- Longino, H. (1990). *Science As Social Knowledge: Values and Objectivity in Scientific Inquiry*. Princeton: Princeton University Press.

- Machery, E. (2020). "What Do Plants and Bacteria Want? Commentary on Carrie Figdor's *Pieces of Mind*". *Mind & Language*, 35, 677-86.
- Mallat, J.; Blatt, M.R.; Draguhn, A.; Robison, D.G.; Taiz, L. (2021). "Debunking a Myth: Plant Consciousness". *Protoplasma*, 258, 459-76.
- Raffaetà, R. (2023). "Cognition and Intelligence After the Post-Human Turn. Insights From the Brain-Gut Axis". *The Journal for the Philosophy of Language, Mind, and the Arts*, 4(2), 179-200.
- Ramos, A. "The Politics of Perspectivism". *Annual Review of Anthropology*, 41, 481-94.
- Robinson, D.G.; Draguhn, A.; Taiz, L. (2020). "Plant 'Intelligence' Changes Nothing". *EMBO Reports*, 21, e50395. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7202214/>.
- Robinson, D.G.; Draguhn, A. (2021). "Plants Have Neither Synapses nor a Nervous System". *Journal of Plants Physiology*, 263, 153467. <https://doi.org/10.1016/j.jplph.2021.153467>.
- Sellars, W. [1963] (1991). *Science, Perception and Reality*. Atascadero (CA): Ridgeview, 1-40. Reprinted from Colodny, R. (ed.) (1963), *Frontiers of Science and Philosophy*. Pittsburgh: Pittsburgh University Press.
- Taiz, L. et al. (2019). "Plants Neither Possess Nor Require Consciousness". *Trends in Plant Science*, 24(8), 677-87.
- Terragni, C.; Cesaroni, V. (2023). "Multispecies Justice and Human Inequalities: Risks in Theorizing Anti-Anthropocentric Politics". *The Journal for the Philosophy of Language, Mind, and the Arts*, 4(2), 201-20.
- Trewavas, A.; Baluška, F.; Mancuso, S.; Calvo, P. (2020). "Consciousness Facilitates Plant Behavior". *Trends in Plant Science*, 25(3), 216-17.
- Tripaldi, L. (2022). *Parallel Minds. Discovering the Intelligence of Materials*. Falmouth: Urbanomic. En. transl. of: *Menti Parallele. Scoprire l'intelligenza dei materiali*. Firenze: effequ, 2020.
- Wittgenstein, L. (2018). "Remarks on Frazer's *The Golden Bough*". Da Col, G.; Palmié, S. (eds), *The Mythology in Our Language: Remarks on Frazer's Golden Bough*. Chicago: HAU Books, 29-77.
- Viveiros de Castro, E. (2016). *The Relative Native. Essays on Indigenous Conceptual Worlds*. Chicago: HAU Books.