



The problem of sentience

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Abstract

Sentience, as the capacity to feel pleasure and pain, is often understood as a property of an organism, and the main problem is to determine whether an organism possesses this property or not. This is not just an armchair worry. Sentient ethics grounds its normative prescriptions on sentience, so assessing if an organism possesses sentience is crucial for ethical reasoning and behaviour. Assessing if it is the case is far from simple and there is no stable agreement about it. This is the problem of sentience. In this paper, I argue that there is a problem intrinsic to the problem of sentience. I call it the “metaproblem of sentience”. I claim that the assumptions that underlie the concept of sentience are what create the “problem of sentience”. In the first part of the paper, I list and describe these assumptions and show how they create the problem of sentience in sentient ethics. In the second part, I offer enactive and pragmatist tools, namely real doubt (Peirce, In: Kloesel C (ed) *Writings of Charles S. Peirce: A Chronological Edition*, vol. 3. Bloomington: Indiana University Press, 1986) and loving epistemology (De jaegher, *Phenomenol Cogn Sci* 20:847–870. <https://doi.org/10.1007/s11097-019-09634-5>, 2019), for tackling the problem of sentience. I advance a participatory account of sentience and show of relevance of the transcendental argument (Weber and Varela, *Phenomenol Cogn Sci*, 1:97–125, 2002; Weber, *Natur als Bedeutung: Versuch Einer Semiotischen Ästhetik Des Lebendigen*. Königshausen & Neumann, 2003; Thompson, *Mind in life: Biology, Phenomenology, and the sciences of mind*. Harvard University Press, 2007) in ethical discourse. My own contribution is that the transcendental argument should be understood in a relational manner, from the experience of participatory sentience. So it is not just that life can be *known* only by life. Life can be *cared for* only by life. So, as in sentient ethics, it is out of my concern for sentient beings that I need to care for them. But, distinct from sentient ethics, my approach to participatory sentience would push to known sentience from how I care for sentient beings, from how I engage with them, from how I take part in their life. I conclude by stressing the significance of a participatory ethics of sentience.

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1 Introduction

Evan Thompson recently raised the question of whether all living beings are sentient (Thompson, 2022). Through an in-depth analysis of the many different arguments for and against this claim, he concluded that there is no definitive scientific answer to the question. Although this conclusion might sound unsatisfying, I take it as a very promising starting point for this paper. The reason is that the inability to provide a definitive answer to this research question is symptomatic of what I call the “problem of sentience” and its assumptions. The problem of sentience is about determining whether an organism possesses sentience or not. This is not just an armchair worry. Sentient ethics grounds its normative prescriptions on sentience (Singer, 2002; Regan, 2004). So assessing if an organism possesses sentience is crucial for ethical reasoning and behaviour. The reason is that moral consideration should be given to an organism *because* it is sentient. But this also implies that it can hold rights *only if* it is sentient. Assessing whether that is the case is far from simple and there is no stable agreement about it.¹

I do not aim to solve the problem of sentience in this paper. Instead, I want to show that there is a problem intrinsic to the problem of sentience. I call it the “metaproblem of sentience”. If the problem of sentience needs more than a philosophical answer, I show its relevance in sentient ethics. This is because the metaproblem of sentience is a metaethical problem in that context. This means that it is a problem that concerns how the concept of “sentience” is employed in ethical discourse. Also, shedding light on the metaproblem of sentience has an ameliorative aim. The reason is that a different attitude² towards sentience can unfold out of the acknowledgement of the metaproblem of sentience. As I will claim, this different attitude is about taking part in sentience as a member of a sentient community, instead of judging sentience from the outside.

My argumentative strategy is the following. I claim that the assumptions that underlie the concept of sentience are what create the “problem of sentience”. These assumptions are the constituents of what I call the “metaproblem of sentience”. In the first part of the paper, I will list and describe these assumptions and show how they create the problem of sentience in sentient ethics. In the second part, I will offer some enactive and pragmatist tools, namely, real doubt (Peirce 1986) and loving epistemology (De Jaegher 2019), to tackle the problem of sentience. I will advance a participatory ethics of sentience by engaging with the work of Weber (2016). I will also show

¹ For a review and critical assessment of the scientific debate, see Thompson (2022). This problem is far from being theoretical only. Think about the relevance of the assessment of sentience in bioethics, for instance about end-of-life choice and abortion. Also, there are relevant implications for the legal context, for instance in deciding whether to ascribe rights to rivers and mountains.

² On an attitude-based approach to environmental ethics, see Rozen (forthcoming).

the relevance of the transcendental argument (Weber & Varela, 2002; Weber, 2003; Thompson, 2007) in ethical discourse and provide a participatory twist to it.

The perspective I advance here will not supply a direct answer to the problem of sentience. This is because it “(...) does not end the question; it opens it up” (Haraway 2007: 92). As Midgley (2005, p. 2) declares, “[w]hen things do go badly,” we must “readjust our underlying concepts; we must shift the set of assumptions that we were brought up with. We must restate those existing assumptions – which are normally muddled and inarticulate – so as to find the source of trouble.” So the main aim of this paper is to shed light on the problem of sentience and to shift its assumptions. Most importantly, opening the problem up will enact a different way of engaging with sentience. This is because the problem of sentience matters. It is a concrete problem, not a paper doubt (Peirce 1984, p. 212). Also, it is important that it keeps challenging us because this can motivate us to fight for better legislation on sentience, for example, or to engage in participatory ethics. In the conclusion, I will stress that a participatory ethics of sentience is crucial in the Anthropocene, now more than ever.

2 The problem of sentience and the metaproblem of sentience

The problem of sentience has a scientific and ethical significance, and its scope goes far beyond a philosophical investigation of what “sentience” is and what it takes to be a sentient being. However, conceptual clarity is crucial for any scientific discipline. Thus, starting from the meaning of sentience is of paramount importance for orienting ourselves in the debate on sentience. In this section, I will first introduce the problem of sentience and then shed light on its underlying problem, the metaproblem of sentience, and its metaethical assumptions.

As a working definition, I take sentience to be the capacity to feel pleasure and pain. This working definition is the one used by Thompson (2022), who raises a philosophical question about biopsychism. Biopsychism is the position for which feeling is a capacity that belongs to all organisms.³ This is a universalist position that establishes the continuity between life and feeling.⁴ Accordingly, to be an organism – a living being – implies being sentient. In other words, if something is an organism, then it follows that it is sentient.

Very often, the scientific and ethical debate does not start from this universalist position. On the contrary, the debate is about whether a given organism possesses sentience or not. Instead of focusing on the continuity of life and sentience *tout court*, the debate is about the criteria that allow us to assess if a specific organism possesses the sentient capacity or not, the scientific methods that enable the assessment and the interpretation of the collected data. For instance, sentience is assessed in the lab by studying pain perception and emotional responses in rats. The most commonly used

³ For a recent defence of this position, see Reber et al. (2020).

⁴ This is an important position to discuss because, as we will see in the next section, it is strictly related to the enactive life–mind continuity (Thompson, 2007; Di Paolo, 2018). So Thompson wants to investigate if the enactive approach to life implies biopsychism. However, the scope of a philosophical investigation of biopsychism is more than a debate about enaction. The scope of sentience is quite debated in consciousness studies (see, for instance, Pereira, 2021), artificial intelligence and sentient ethics.

method is the “tail flick” or “hot plate” test, in which a rat’s tail is exposed to a mild heat source until the rat flicks its tail away, indicating pain perception.⁵ This kind of experiment does not just aim to know if and to what extent rats are sentient – from the perspective of sentient ethics, this might even imply not using rats in the lab because they are sentient.⁶ Rats are commonly used in experiments because their neurological structures are sufficiently complex to share physiological and genetic similarities with humans. I will come back to the anthropocentric assumption about sentience in a moment. For now, it is enough to focus on pain perception as a key element in assessing sentience because avoiding animal suffering is the main tenet of sentient ethics.

In a scientific context, the main criteria for assessing sentience are the following: (1) having the neurological structures that are necessary for processing sensory information and experiencing subjective states (neurological complexity); (2) avoiding harm, making choices based on preferences, showing signs of comfort/discomfort, also related to physiological changes and adapting behaviour (behavioural evidence); (3) communication skills; and (4) problem-solving skills.⁷ One common criterion for assessing whether an organism is sentient is to see if the organism in question has a central nervous system. The reason is that the central nervous system is considered a requirement for being aware of pleasure and pain.⁸ This criterion has been challenged as human-centred (Mikhalevich & Powell, 2020): acknowledging sentience in human beings due to the central neural system allows for establishing sentience in other species owing to the presence (or not) of a central neural system. The main rationale behind this criterion is downward (Marino, 2020): how low can we go in extending sentience to other species? And should we extend it only to non-human animals that are similar to us, such as mammals, or could it be also ascribed to invertebrates that have a nerve net instead of a central brain?⁹ And what about other organisms that, although without a brain – for instance, algae, sponges, and fungi – seem to display a certain kind of sentience?¹⁰

It might be argued that not all living beings are sentients, but all animals are (this position is called “zoopsychism”; see Griffin, 1992 and, more recently, Ginsburg & Jablonka, 2019). Although this view is quite comprehensive, it excludes plants from sentience. Moreover, zoopsychism as a universalist answer to the problem of sentience is criticised by saying that sentience is not a strict yes or no; instead, it seems that there are grades of sentience (Godfrey-Smith, 2016). For instance, it might be

⁵ For a detailed description of the research design and experiments in mice behavioural testing, see Wahlsten, 2011.

⁶ For a discussion of the ethical issues around sentientism in lab experiments, see Cassaday, 2017.

⁷ For a review of the scientific literature on animal sentience, see Proctor et al., 2013.

⁸ For a review of the neurobiology of pain and the role of the central nervous system in the transmission of pain signals, see Yam et al., 2018. For a philosophical discussion of the neuroscientific approaches to understanding pain, and how the perception of pain is assumed to be an example of conscious experience, see Gray Hardcastle, 2013 and Coninx, 2020.

⁹ This has also led to a criticism of the “marker approach” to consciousness, i.e., detecting characteristics that serve as indicators of consciousness. On this, see Andrews, 2024.

¹⁰ I deliberately express this in a vague manner. The reason is that sentience is often denied to these organisms because it is understood as consciousness. This is strictly related to the metaproblem of sentience that I articulate in this paper.

argued that more complex living beings, such as *Homo sapiens*, are also more sentient than simpler ones – let us say a unicellular prokaryote such as a bacterium or an amoeba. Still, the latter might be considered a sentient being, although one with a lesser capacity to feel, for the simple reason that its sensory organs are less developed. So it might be rebutted that, in the context of biodiversity, we need instead a multispecies approach to sentience (Haraway, 2007). So it might follow that the central neural system criterion can work for mammals but not for a mollusc, for example, and that we need a different criterion to assess sentience in organisms without a central neural system.

In the traditional context of animal rights, assessing sentience means assessing if an organism can be considered a member of a moral community. The main criterion considered by ethicists is the ability to suffer. Singer (2002), echoing Jeremy Bentham's "Can they suffer?" (Singer, 2002: 7–9) has argued that the ability to suffer is the crucial characteristic that gives a being the right to equal consideration of interests. It is not a matter of thinking skills but of feeling skills. The reason is that, for Singer, any being capable of suffering has interests (primarily the interest in not suffering) and, thus, these interests obligate moral agents to consider these interests equally, irrespective of the species of the being. Regan (2004) focused on a range of cognitive abilities instead, spanning from memory and perception to mental representations and intentionality. The main rationale here is that Regan takes a sentient being as a "subject-of-a-life" and this implies having a richer and more complex inner life – not just mere reactive behaviours to stimuli. The capacity for subjective experience is understood as a criterion of sentience by Francione (2009) too, although his main aim is not assessing sentience but taking basic sentience as sufficient to warrant moral and legal rights. This means that his focus is less about the degrees of sentience or differentiating between levels of cognitive abilities and more about the presence of sentience as a threshold for moral concern.

There are different conceptual frameworks in place here that confer different weights to the criteria and are field-dependent. There are, of course, some important cross-disciplinary approaches, for instance that of Bernard E. Rollin, who developed the field of veterinary ethics. Like Singer, Rollin focuses on the ability to suffer, but he also stresses that animals can hold mental states, and this is clear if we observe their behaviour without being trapped by anthropocentric views on consciousness, animal minds and suffering (Rollin, 1989, 2011). However, some common threads can be recognised. This paper explores one common thread I found in these criteria and shows that it creates the problem that we face in assessing sentience. I will present it in detail below. First, I need to explain how this thread is related to the metaproblem of sentience.

As I said in the Introduction, assessing whether an organism is sentient is far from simple, and there are no definite or fully agreed scientific answers nowadays. This is the problem of sentience. And the problem of sentience is also where Thompson's paper ends (Thompson, 2022). Now, let me explain how I tackle it. Assuming the biopsychist position would solve the problem from the start, so a philosopher might be tempted to argue for it. But I would rather employ a different strategy here. The reason is that I see an inherent problem in the problem of sentience. This is what I call the "metaproblem of sentience". The metaproblem of sentience is about how we

conceive sentience, and thus is crucial for how we assess it, that is, it is crucial for the problem of sentience. Therefore, I recommend first highlighting the metaproblem of sentience and, then, eventually, coming back to biopsychism free from conceptual assumptions about sentience. In this paper, I am going to perform the first step.

The metaproblem of sentience is a conceptual problem that underlies the problem of sentience. I take it here as a metaethical problem, although its impact extends to other disciplines and, notably, scientific methods and practices. It is a metaethical problem because how we conceive of sentience conditions the assessment of sentience, and the assessment of sentience has crucial ethical implications. Also, although I cannot argue for it here, it might be argued that how we conceive sentience constitutes, at least in part, our ethical behaviour. For sentient ethics, sentience is the mark of moral consideration. Especially in its utilitarian asset (Singer, 2002), we need to reduce suffering as much as we can. But this also implies that we need to give more value to those living beings who are sentient, namely, those who can suffer.

The metaproblem of sentience is about how sentience is understood. From a conceptual point of view, the most relevant thread among the criteria for assessing sentience is that sentience is understood as *a property* of an organism. Accordingly, the assessment is whether a given organism holds or does not hold this property. A property is something that something or someone possesses. Also, a property qualifies those who hold it. Properties make what a thing is, its identity. They characterise what makes it different from the things that do not possess this or that property.¹¹ Following this reasoning, what should be done to assess sentience is to discover whether or not a given organism has this property and to qualify it as sentient by ascertaining if that is the case. This is because sentience is here understood as a property of an organism. There is an ontological commitment in place here. Although, as I will show in a moment, two of the assumptions of this reasoning are epistemological, this ontological commitment is crucial because it is precisely about what a sentient being is. So if it is established that an organism has sentience, that organism will be a sentient being, that is, a being with the quality of sentience. Only in this case will it be a proper object of moral consideration.

It might be argued that the working definition of sentience does not use the concept of “property” but that of “capacity”. It might then be argued that the conceptual problem I highlight is not there. However, a capacity is precisely understood as a constituent of the identity of the holder of that capacity. For example, when we say that what makes a carpenter is the capacity to measure, cut and shape wood, this capacity is what defines a carpenter. So the ontological reasoning is still there. It is only that, instead of focusing on a material property, for instance that a tree consists of a trunk and branches, it focuses on an agentic property, for example the capacity to bear fruit. It can be then asserted that a definition is simply a linguistic practice, that no ontological commitment is involved.¹² However, I would bite the bullet and stress

¹¹ I present this thesis in a very classical manner, but it is important to notice how it has been implemented throughout the history of Western philosophy. For instance, it has also been discussed in pragmatist terms by William James in relation to the empirical self that is constituted by its possessions. See James (1890).

¹² Interestingly, Aristotle understood this categorical definition as a linguistic practice too. But, at the same time, it was dependent upon his theory of substance. On this, see Scaltsas (1994).

that this common thread is ontological because it is precisely about what a living being is, that is, whether or not it is sentient.

This ontological reasoning holds three interlaced assumptions: (1) a focus on individual organisms; (2) the extraordinary character of human sentience; (3) sentience should be assessed from the outside.

- (1) An organism is understood as an individual. An individual is what it is because it is not the same as the other. It might be similar but not the same. Specific properties are what characterise an organism as an individual. The Leibnizian principle of indiscernibility is crystalline about it: individuality stems from difference. And difference is what separates an organism from the others, what makes it an individual. *Omnis determinatio est negatio*.¹³
- (2) Human sentience is taken as the prototype of sentience and is used as the metric for assessing the sentience of other organisms. In human beings, sentience is related to the awareness of being the subject of the experience. In technical terms this is called “phenomenal consciousness”, that is, the way it feels when one undergoes an experience. This means that the way it feels is valenced as pleasurable or painful. The result is that sentience is often translated as consciousness.
- (3) Sentience is “assessed”: the criteria framework functions as if we were in a tribunal in which a non-human organism is judged by a human organism. The non-human organism might be culpable of not possessing the specific character of the assessor, namely, to be sentient as a self-conscious being. This assessment is led hierarchically and “from the outside”.

Let me explain how these three assumptions underlie the problem of sentience.

The first assumption is an ontological perspective that privileges individuals. It might be argued that we now have other ontologies available, such as relational ontologies or new-materialist ones that can ground differently the criteria for assessing sentience.¹⁴ It might be stated, for instance, that how I present the problem of sentience is very classical and grounded in a constituent ontology such as the Aristotelian ontology of proprieties and substances.¹⁵ This is true and important. But my point is to tackle the common thread in the assumptions – and these are precisely understood in a constituent manner.

The anthropocentric prototype of sentience is problematic because it adds to the ability to feel (sentience) the capacity of being aware of feelings. Human experience is the sine qua non of sentience (Reber et al., 2020). This is a conflation of sen-

¹³ This has been taken by Tarca (2008) as the most prominent feature of Western ontology, from Spinoza to Hegel.

¹⁴ These alternative ontologies can be very useful for changing the paradigm of sentience. I do not discuss them here because my focus in this paper is ethical, not ontological. However, I hope to discuss them in the future and show how they can support my participatory ethics of sentience, also considering cases of swarm intelligence and decentralised systems.

¹⁵ For a discussion of the differences between relational ontologies and constituent ontologies, see van Inwagen (2011).

tience and consciousness.¹⁶ There are different types of consciousness and the awareness of feelings could be pre-reflexive. However, although not strictly necessary for sentience, the presence of self-awareness is often associated with higher forms of sentience, and the scientific criteria I listed are very much related to “intelligence”; see in particular the fourth criterion about problem-solving skills. Self-awareness is assessed through tests like the mirror test, for instance. This means that what is assessed is not the capacity to feel but the capacity to be self-aware, that is, to be the subject of the feeling experience. So sentience presupposes the subject of the experience: without consciousness there is no sentience, understood as the subjective experience of pleasure and pain. That is why Descartes, most notably, denied sentience to animals.¹⁷

Again, I wish to stress that this is a common thread that underlies the criteria for assessing sentience, although it is not the only one. For instance, there are alternative accounts of consciousness that would arguably unlock sentience to non-human beings.¹⁸ Also, the phenomenological distinction between metacognitive self-awareness and pre-reflective self-awareness can be employed for ascribing sentience, as pre-reflective self-awareness, to certain non-human beings. Important interventions have been made in this regard. Think, for instance, of the Cambridge Declaration on Consciousness, in which a prominent international group of scientists declared that “humans are not unique in possessing the neurological substrates that generate consciousness” (Low, 2012: 2). We have now a new declaration, the New York Declaration on Animal Consciousness, that extends the scope of consciousness by updating the range of animals in which consciousness is recognised (Kristin et al. 2024). This is of paramount importance and I expect this declaration will play a crucial role in sentient ethics. However, there is something new in my criticism. I do not aim to “extend” sentience *qua* consciousness to the other-than-human. My aim is more basic and comes before that: I question the conflation of sentience and consciousness because, I claim, it is what creates the conceptual problem that involves the assessment of sentience.

The third assumption is a methodological problem that understands scientific inquiry as a detached and neutral activity. It follows that a scientist needs to assess whether a given organism is sentient in a manner that does not involve any bias or presuppositions. But, in the case of sentience, the assessment is neither detached nor neutral. We take something specific of humans (sentience as consciousness) and we

¹⁶ A key example of this conflation that is quite widespread can be found in Damasio & Damasio, 2023b. The authors argue that ascribing sentience to plants is confusing because sentience implies feeling, experience, and subjectivity and not just “sensing” as in the case of plants. But their argument assumes that sentience is consciousness, i.e., “a valenced experience of the state of the interior” (Damasio & Damasio, 2023b: 3). This is because feelings are the source of consciousness, as the physiology of interoception is the enabler of consciousness (Damasio & Damasio, 2023a).

¹⁷ An animal-friendlier interpretation of Descartes is still under debate; see footnote 5 in Rowlands & Monsò (2017).

¹⁸ Notably, Rowlands and Monsò (2017) challenge an (over)intellectualist account of consciousness and propose the aponoian paradigm that can be better extended to non-human beings. The aponoian paradigm states that seemingly complex psychological states do not require reflexive thought. So the conflation of sentience and consciousness might be less problematic if we endorse the aponoian paradigm, but this possibility needs further investigation.

ask if other living beings possess it. But this is what makes us human – the specific difference (as in assumption 1) – and so the judgement (*das Urteil*) that cuts and separates humans from non-human animals is functional to the anthropocentric view (assumption 2).

I have used the metaphor of a tribunal for depicting how the assessment is performed. It might be contested that this is an exaggeration. Of course, there might be other motivations than accusing a defendant in court, and I am sure that many times the assessment genuinely aims to discover whether consciousness is an inherent quality of life. Also, the assessment of sentience can be motivated, especially in sentient ethics, by a real concern for the well-being of non-human animals. Notably, this concern is linked to a criticism of the superiority of human beings (Singer, 2002: 185–212). Still, the main argument of sentient ethics is grounded in human sentience since it extends the analysis of the wrongness of human suffering to the wrongness of non-human suffering. This is ethical extensionism.¹⁹ So it is true that Singer does not use this argument in a hierarchical manner that puts humans on the top and, on the contrary, states the equality principle among species (Singer, 2002: 1–24).²⁰ It is also true that he constantly stresses the similarities between human and animal pain for challenging speciesism because, although human and non-human animals both feel pain, they are still treated differently. This is very important to acknowledge because sentient ethics marks a fundamental improvement in animal ethics. However, I would ask: why not search for something that is partaken instead of something that is specific to a different being and that can/should be extended to other living beings? Why should human sentience be the foundation of the argument?²¹

Again, the problem I wish to stress is conceptual and is reflected in the method: sentience is assessed on the grounds of human sentience. This implies a gap that should then be filled, for instance through the equality principle. But this gap still defines a method “from the outside” that hinders the possibility of finding sentience in the experience. I will refine this concept in the following section, since it will allow me to present my alternative take on the problem.

¹⁹ Singer uses extension because he starts from the problem of other minds: “We know this from the direct experience of pain that we have when, for instance, somebody presses a lighted cigarette against the back of our hand. But how do we know that anyone else feels pain? We cannot directly experience anyone else’s pain, whether that ‘anyone’ is our best friend or a stray dog. Pain is a state of consciousness, a ‘mental event,’ and as such it can never be observed” (Singer, 2002: 10). So Singer assumes individualism (first assumption) and the conflation of sentience and consciousness (second assumption). From there, he urges the readers to go beyond them through extension and using arguments by analogy. Still, the metaproblem of sentience remains.

²⁰ It is important to mention that the principle of equality has been conceptualised differently in sentient ethics. If for Singer it is grounded on an equality of interests, for Regan (2004) it is grounded on an equality of rights.

²¹ It might be argued that this is more effective and persuasive because it relates to our human experience, and so it triggers our empathic concern and mobilises our emotions. Although utilitarians do not want to work with sentiments, still many successful animal rights campaigns against cruelty (for example, in labs or in farming) are precisely built on sentient ethics. For an analysis of the seminal campaigns against cruelty in the United States, the United Kingdom and Australia, see Munro (2005).

3 Partaking sentience

How does the problem of sentience change if we do not follow the implicit ontological reasoning and its assumptions? I suggest approaching sentience from our experience of sentience. Arguably, our experience of sentience is partaken. By saying that it is “partaken” I do not only mean that feelings of suffering and pleasure belong to all living beings, as suggested by sentient ethics. But I want to stress that we participate in sentience. “Participation” is not that of having the property of sentience in common but rather of being involved in sentience. So I suggest understanding sentience as relational and agentic. Accordingly, I retain the core idea of sentient ethics – that we, both human and non-human animals, suffer – but, instead of extending sentience to all living beings and, thus, making it a common trait among different species, I focus on the participatory nature of sentience. Also, I argue that this participation can better ground our ethical concerns for the well-being of others. This is my argument in a nutshell. Let me unpack it.

Feelings are typically taken to be private mental experiences about bodily states.²² Thus, it is assumed that one cannot feel another’s pain; my pain is always only my own, although one can infer how I feel. Although this view resonates with our everyday experience of the embodiment of feelings, it has some important shortcomings. For one, it seems unable to explain how feelings can be shared. A lot of work should be put into filling the gap between organisms who are supposed to share feelings, be it empathy or social cognition. The enactive approach to cognitive science (Varela et al., 1991; Di Paolo, 2005; Thompson, 2007) offers a more direct alternative to this. Cognition is based on the constitutive embodied interaction between organisms and their natural and cultural environments. Cognition, in enactive terms, is not a representation of a given reality. Rather, it is a process of sense-making that is inherently affective (Colombetti, 2014). This means that it emerges from embodied existential concerns in relation to which organisms stand and build meanings together. It follows that a constitutive embodied interdependence as affective engagement is the ground for responsiveness to the feelings of others. Therefore, I suggest, sentience, as the capacity to feel pleasure and pain, is a fundamental quality of the affective engagement among living beings. It is not just about interoception. It is the felt dimension of participatory sense-making, that is, the co-regulation of interaction and social understanding (De Jaegher & Di Paolo, 2007). By this I mean that the capacity to feel pleasure and pain is relational and agentic; it is not a property of an individual that should be extended to other living beings. It is the other way round. It is the capacity of organisms to affectively relate to each other in ways that answer to their own and others’ concerns. It is not a “property” of an organism, as in the common thread that I stressed in the previous section about the metaproblem of sentience. It is “in-between”. But why is this capacity relational? Sentience comes from the Latin verb *sentire*, which means “to feel”. As a verb it expresses an action. Approaching sen-

²² The “private” dimension of feelings is typical of modern philosophy since Descartes. It stems from the problem of other minds. However, the idea that feelings are mental states about bodily states is common also among those who distance themselves from Descartes, notably Antonio Damasio. See Damasio & Carvalho, 2013.

tience from our experience of sentience does not mean focusing on feeling pleasure and pain as private inward states. Instead, it means feeling in relation to the others, yourself and the environment: it is taking part in a sentient community.²³

I need to stress an important point before moving forward on the participatory dimension of sentience: I do not want to advance a relational ontology of sentience here, although this is an important and much-needed task. My focus is ethical, not ontological. The reason is that my main concern is about how we assess sentience. It is about the problem of sentience and its assumptions. This is an epistemological problem with serious ethical implications. So it is more important for me to challenge the classical ontological reasoning through a participatory epistemology and ethics. I take this participatory stance from the pragmatist approach to inquiry and the enactive epistemology of loving and knowing. In this section, I first present how pragmatist and enactive approaches to epistemology converge on this participatory stance. Then, I advance my argument for participatory sentience, especially stressing its ethical significance.

I concluded the previous section by pointing to a method “from the outside”. I claimed that this method assumes human sentience as the metric to assess non-human sentience. In this manner, the resulting assessment is very judgemental and anthropocentric while claiming to be objective and neutral. I also stressed that although sentient ethics is grounded in the equality principle among species, its argumentative structure works similarly. The reason is that it uses analogies with human sentience to extend interests (Singer, 2002) or rights (Regan, 2004) to non-human living organisms. I also pointed out that this method from the outside is one of the assumptions that underlies the problem of sentience. So, I argue, the way we understand sentience should be revised, starting from the method used to assess it. This might imply a revision of the scientific method to assess sentience as well. But this is not my role.²⁴ I focus here on the ethical significance of the problem of sentience and, in this section, on an alternative to the method from the outside as one of its assumptions. I call this alternative method “participatory”.

A participatory method starts from real-life experience and is moved by existential concerns and living doubts. As I have already stressed, the problem of sentience is not an armchair problem. Knowledge production is not the observation of a given reality but an active process of inquiry into a problematic situation. By “real doubt”, Charles Peirce means an existentially charged question that addresses a belief one actually questions, not a pretended sceptical attitude towards a purely hypothetical matter (Peirce 1986: 248). So, by questioning sentience, I am engaging with a ques-

²³ This is very much in line with Heidi Maibom’s approach to empathy as in-between (Maibom, 2022), Lori Gruen’s entangled empathy (Gruen, 2015) and Valentina Fantasia’s enactive approach to empathy as embodied engagement (Fantasia et al., 2014). Still, my main focus here is not empathy but the very same capacity to feel pleasure and pain as relational.

²⁴ Please see the work done by Vinciane Despret who explores how scientists interact with animals in research settings and how these interactions can reveal different forms of sentience and agency. With a critical approach to the separation of observed and observer in the scientific method, she has also offered an alternative method that endorses a multispecies approach where understanding sentience comes through engaged and responsive relationships with animals (Despret, 2016). Importantly for this special issue, Despret approach has been inspired by William James’ account of body as learning to feel. See on this Despret, 2004.

tion that not only kindles my interest but that I perceive as problematic. It follows that an inquiry into sentience is different from a “paper doubt”, which for Peirce is not genuine since it is not kindled by a real, heartfelt issue (Peirce 1984: 212). My concern is not just a contingent condition. Without living doubt there cannot be real inquiry, since real doubt plays an ineliminable role in motivating and regulating inquiry (Hookway, 2002: 246–264). Also, precisely because it is a living doubt, an inquiry into sentience can be seen as a practice with ameliorative aims. This is because an inquiry into sentience will allow us to revise our judgements in light of the consequences of acting on them (Dewey, 1920: 173–174; Dewey, 1922: 208).

Focusing on living doubts and existential concerns resonates well with the enactive approach to sense-making. In particular, Hanne De Jaegher’s epistemology of loving and knowing (De Jaegher, 2019) can be useful for understanding why the issue of sentience is “heartfelt”, as Peirce said. De Jaegher names her enactive epistemology a “loving epistemology”. This is because it does not assume neutrality and objectivity as paradigms for knowing. It is not a method from the outside. Instead, to know something is to be in connection with it by caring about it. Caring about it means taking part in its life, engaging with it because it matters to you and you want to know more about it (Candiotta, 2024). Let me recall the example of testing pain perception on mice in a lab. The desire to know more about it, in a loving epistemology, cannot be reduced to a means for the sake of, for instance, understanding how human consciousness works. But it would imply a real interest in knowing what is painful for mice. But this cannot be just out of curiosity. As it has been stressed by Donna Haraway, “curiosity, not just functional benefit, may warrant the risk of ‘wicked action’” in the context of experimental labs (Haraway 2007: 70). In a loving epistemology, discovering what is painful for mice might imply working for the welfare of mice, including working on legislation to govern the ethical treatment of animals in labs, if not making their use in labs unacceptable.²⁵ And it also implies considering the suffering of the researcher who takes part in the experiment.²⁶ So it follows that an enactive exploration of sentience is done because we care about sentient beings. But, as I have already said, this was the case for sentient ethics as well. What is the difference, then?

The difference is that this knowing as caring is understood as participatory sense-making, that is, engaging and taking part in the life of the other to know more about it. Different from a method from the outside that is spectatorial and judgemental, this

²⁵ This leads to pernicious ethical debates about the use of animals in labs for human benefit (for instance, in testing drugs and medical procedures that can be life-saving for humans), which would extend the focus of this paper. Still, I want to signal that a loving epistemology can offer an important take on this debate and that further work is needed in this regard.

²⁶ More should be said about this, especially in discussing the ethical controversies around it; unfortunately I cannot do it here. But it is important to stress that “participation”, in enactive terms, is not only an other-oriented attitude, and the perspective of the researcher should be taken into account in discussing these cases. Also, from an ethical point of view, it cannot be assumed that researchers in labs are just monsters who do not care about the suffering inflicted. Donna Haraway’s description of Baba Joseph’s shared suffering with his guinea pigs in the lab (Haraway 2007: 69–93) is very instructive in this regard. For a first-person account of the suffering experienced in labs, see Weber (2016), in particular Chaps. 5 and 12.

enactive approach is participatory.²⁷ It follows that sentience can be known only from taking part in sentience, from “an existential way of relating” (De Jaegher, 2019: 14) to sentience – in other words, from first-person insights that appear through feeling alive (Weber, 2015), “from the immediate flux of life which furnishes the material to our later reflection” (James, 1912: 46). This leads me to my next point, namely, the connection between participatory sentience and the feeling of aliveness.

By *participatory sentience*, I mean the capacity to feel pleasure and pain by engaging with other organisms and environments. Instead of understanding this capacity as phenomenal consciousness – as in the second assumption I analysed in Sect. 1 – I suggest conceiving it as the very same feeling of being alive in connection with others, that is, in participatory sense-making. This is because, in enactive terms, life emerges out of a constitutive relationship with the environment, and this relationship is primarily performed through sensing the environment in an embodied manner. This primordial affectivity, as it has been named by the enactive thinker Giovanna Colombetti (Colombetti, 2014), or sensibility, as named by the pragmatist thinker Roberta Dreon (Dreon, 2022) is, thus, partaken. This fundamental participatory dimension of sensibility can be studied in many different aspects, such as the affective intentionality of concerns and responsiveness, the mutuality and reciprocity of the engagement, and the types and nuances of ecological transactions. Although these aspects are important, my main aim here is to stress how much this participatory account of sentience can help us to revise how we assess sentience.

The first step is to dive deeper into this *feeling of aliveness* and understand why it is partaken. Weber (2016) defines the feeling of aliveness as a fundamental moving force in all living beings that pushes them to meet others. The feeling of aliveness is not just an inward experience. Of course, this feeling is grounded in our own experience, but our experience is partaken with other living beings. It is not private. This experience involves pleasure and pain: it is valenced.²⁸ Colombetti (2005) stresses that the word “valence” comes from the Latin *valentia*, which means power or capacity. This is quite interesting for my conceptual analysis of sentience because it highlights the agentic dimension of sentience as valenced. Instead of focusing on sentience as an individual capacity about feelings, be it consciousness or something else, to understand the valence of sentience in terms of agency allows me to illuminate the power in the feeling itself. Colombetti (2005) stresses that “valence” is used in chemistry too, to refer to the charge of electrons. She also carefully analyses how this meaning has been used in psychology: valence as a charge is an invitation to do something.²⁹ So it follows that if sentience is charged, there is a power in it. Valence is not just pleasure and pain but also attraction and repulsion, for example. Attraction

²⁷ This has been already remarked by De Jaegher and Di Paolo (2007), but De Jaegher (2019) has developed it further by stressing that a participatory epistemology is a loving epistemology.

²⁸ Usually, this felt quality has been understood in terms of simple polarities, such as good or bad (Kaheman, 1999), pleasant or unpleasant (Russell, 1980), and as bringing pleasure or pain (Frijda, 1986). For a critique of the simple polarities view, see Colombetti (2005) and Candiotti (2023a).

²⁹ The German verb *auffordern* means to invite one to do something; *Aufforderungscharakter* thus refers to the property of inviting one to an action. An accurate translation would be “affordance-character”, where the term “affordance” is borrowed from ecological psychology (Gibson, 1979) and refers to properties of the environment that afford or invite a certain behaviour towards it (Colombetti, 2005: 105).

and repulsion are relational and agentic: they are responses to an invitation from the natural and cultural environment. I would claim that this responsiveness of sentience highlights the participatory dimension of sentience in an agentic manner, that is, sentience is in the engagement with other organisms and environments.

The second step is the following. In his third law of desire, Weber (2016: 44) states that “only in the mirror of other life can we understand our own lives”. This law revolves the usual individualistic approach from which, at best, we *extend* our feelings to others. Here the epistemological approach is twisted. It is from the fundamental participatory experience of being alive that the inwardness of feeling springs forth. So consciousness is not denied but nor is it seen as the condition for sentience. Rather, if there is sentience, then consciousness can emerge.³⁰ Please bear in mind that this conscious condition is what, most of the time, leads humans to deny sentience to non-human living beings. So the account of sentience that I propose here allows us to assess sentience according to the relational capacity of sensing. A lot of criticism has been directed at utilitarian sentient ethics. For example, it has been challenged by saying that it is ethically wrong to inflict suffering on someone who cannot be aware of the pain, such as a person in a coma or one with severe mental impairment, but it seems we cannot hold this fundamental claim in sentient ethics. The argument here is that only sentient beings, namely, subjects who are aware of suffering, can be considered the bearers of moral consideration, and so sentient ethics cannot prescribe not inflicting pain on a human being in a coma. Separating sentience from consciousness has, therefore, the additional value of replying to this criticism but still holding sentience at the core of ethical reasoning.

The third step involves the question of how we assess sentience. My suggestion is to do so by partaking sentience. Weber, Varela and Thompson (Weber & Varela, 2002; Weber, 2003; Thompson, 2007) have developed a transcendental argument drawing on the work of Hans Jonas. The core idea is that we need to ground our investigation of sentience in our experience of sentience: life can be known only by life (Jonas, 1966). This philosophical argument dismantles the premises of a method from the outside and grounds the assessment of sentience in the very same experience of sentience. In a recent paper on sentience, Thompson comes back to this argument: “Speaking for myself, when I look at videos of what bacteria do and hear biologists talk about how they do it, I have no difficulty seeing feeling as part of the picture. I will never forget Lynn Margulis showing me her films of bacteria and protists while arguing that these organisms should be regarded as sentient. My perception of life was completely changed” (Thompson, 2022: 31–32). Still, he stresses, this is not enough to solve the problem of sentience from a scientific point of view.

³⁰ I take it to be a specification of the enactive continuity thesis between life and mind, since I understand sentience as the basic feeling of aliveness. So we can have life-sentience-mind as an alternative to life-mind-sentience (as in the traditional criterion that requires consciousness for sentience). However, more work should be done here because there might be disagreements about this, even among enactive thinkers. Thompson (2022) also stresses that these two different views can even be found in Varela. Interestingly, the view that stresses that sense-making and sentience are co-extensive comes after the one advanced by working with Maturana on autopoiesis (Maturana & Varela, 1980). This might make us think that he corrected the autopoietic view. However, it is important to stress that there are also some works on autopoiesis that directly link it to sentience (Margulis, 2001). But, again, to engage with this issue would extend the scope of this chapter beyond the space available.

Here lies the potential I find in the conclusion of Thompson's paper. The problem of sentience is about the scientific method that is from the outside, a method that disregards first-person experience and endorses the many assumptions I have presented in discussing the metaproblem of sentience.³¹ It is not a problem of sentience itself. So the transcendental argument can direct our attention to the limits of a method from the outside and stress the need to assess sentience from sentience, namely, as a sentient being. This is, in fact, the meaning of "transcendental": sentience is the condition of possibility for knowing sentience. A method from the outside is not sentient and so cannot assess sentience.

My own contribution is that the transcendental argument should be understood in a relational manner, from the experience of participatory sentience. So it is not just that life can be *known* only by life. Life can be *cared for* only by life. So, as in sentient ethics, it is out of my concern for sentient beings that I need to care for them. But, distinct from sentient ethics, my approach to participatory sentience would push to know sentience from how I care for sentient beings, from how I engage with them, from how I take part in their life. Caring for sentient beings is the fundamental ethical meaning of "participation". From the perspective of a loving epistemology (De Jaegher 2019), it follows that to care for sentient living beings is also to illuminate that they are sentient. But it is important to stress the ethical relation with sentience as a condition for knowing it. And an ethical relation with sentience is, as I have argued, a matter of partaking life, for instance in becoming native to a place and learning to listen more and better to its inhabitants (Candiotto, 2022). As Haraway (2007) remarks, this means to explore the intertwined relationships between species – not to assess sentience anymore. For Haraway, we "become with" other species, which means that be "one is always to become with many" (Haraway 2007: 4).

This resonates with the enactive view of organisms as unfinished and in constant processes of becoming (Di Paolo, 2021) and with the co-constitution of identities in participatory sense-making. This is a crucial entry point to my approach. But my way to get there in this paper is not through an alternative ontology but through the fundamental ethical relation in partaking sentience, in being a member of a sentient community and engaging in ongoing relationships. The enactive focus on the affective concern as a living force is crucial in this argument. This is because life, in enactive terms, is sense-making, and so, when I care for living beings, I do it because they mean to me.³² Also, the affective concern has to do with an engagement that is moved

³¹ This is why enactive-inspired scientific inquiry takes first-person experience into account, for example in neurophenomenology and microphenomenology.

³² As Cora Diamond stressed (Diamond, 1991), I acknowledge animals as "fellow creatures" because they mean to me. Although she claimed that this implies a transition from biology to moral life (so, they are not just animals, but fellow creatures) and this is in contrast with the enactive continuist approach to life and mind, I take her approach to be crucial here. This is because she highlights the ethical value of meaning-making: "a pet is not something to eat" (Diamond, 1991: 469). A cow simply does not mean "something to eat" (to a vegetarian), no matter what. This enables me to not take as immoral the use of antibiotics for expelling bacteria from my body when I am ill, for example. However, it might be criticised that this perspective is egocentric and gives value only to the living beings that do not threaten my life but, instead, enrich it – as a pet companion, for example. A lot should be said to fully reply to this criticism. Here I can only point to the direction of my answer which lies in the ethics of sense-making (Weichold & Candiotto, 2023). Especially in conjunction with the enactive approach to life and biosemiotics, the ethics of sense-

by a heartfelt doubt and a process of co-inquiry. These are crucial motivations for an ethics of knowledge (Candiotta, 2023b). It is not by chance that Thompson appreciates the sentience of bacteria by discussing and watching videos with Margulis. However, participation is not the same as sharedness (Candiotta & De Jaegher, 2021). It starts from difference and it keeps it, with all the tensions that come from it. So I am not denying that we will constantly face ethical dilemmas in a participatory ethics of sentience, for instance about how to prioritise welfare in situations involving conflicting interests between species. In Singer's approach (Singer, 2002), this might involve weighing interests across species. In participatory ethics, instead, this would imply focusing on the affective ability to reply to the needs of a situation and to work with and through the frictions as a participant in that situation. This is because difference becomes participation (Di Paolo & De Jaegher, 2022).

Returning to the transcendental argument, this translates into saying that partaking sentience as caring for sentience is the condition of possibility of knowing sentience.³³ Still, the approach that I advance here might be criticised as anthropocentric. True, this method starts from us, and we are human. However, here I consider the human not as a living being who judges the sentience of other living beings from the top of the scale of sentience. On the contrary, I take the human to be a member of a sentient community (Weber, 2020).³⁴ This means that knowing sentience from sentience does not imply using human consciousness as the metric to assess non-human sentience. It might be argued that, still, the assessment is done by the human, making this approach not so different from the method from the outside that I challenged in the previous section. However, the participatory approach I advance no longer aims to *assess* sentience, if by assessing we mean judging whether the organism is sentient or not in order to care for it. This is because, in relating to other organisms, in taking part in their life, we *partake* in sentience. So we know sentience as a specific kind and very fundamental caring relation. As James (1909) stressed, we do not only know objects, we can also know relations, directly, because they are part of the experience. Finally, sentience is not assessed but is experienced as partaken. We know sentience through caring for it. This is the fundamental ethical meaning of participatory sentience that grounds my revised version of the transcendental argument.

making can help us differentiate between self-centredness and concern and, thus, at least nuance the force of the criticism. But I also want to stress that I do not want to deny the value of the criticism. There is a lot to discuss in there. For instance, why do I give more value to certain living beings (my pets) and not others (my pathogenic bacteria)? Is this difference of treatment ethical? Does it imply that not all living beings are part of my sentient community? On what grounds should certain living beings be excluded from it? Should I instead extend my meaning-making to all living beings? These questions are at the core of sentient ethics and can push towards further developments in the acknowledgement of a moral status to all sentient beings, for instance as in the abolitionist approach (Francione, 2009) and animism (Weber, 2020). I foresee that my participatory approach to sentient ethics can efficiently reply to these questions by stressing the relational dimension of embodied meaning in partaking sentience, but more work is required.

³³ This approach resonates with enactive ethics (Varela, 1999), where ethical know-how is embodied, embedded and enacted in responding to the needs of the other and the situation.

³⁴ I cannot go deeper into this here, but it would be very important to stress the differences between this embodied account of sentient community and Singer's principle of equality to appreciate why a participatory ethics of sentience is needed. I aim to do this in the future.

4 Conclusion: A participatory ethics of sentience

Why do we need this participatory approach to sentience? As I have argued, tackling the metaproblem of sentience reframes the core assumptions of sentient ethics, its individualistic stance, the role of human sentience and the method from the outside. In so doing, the responsibility towards sentience is no longer ordered by principles or consequential reasoning but emerges out of participatory sentience.³⁵ This epistemological twist comes from an ethical engagement with sentience. I take this as a pragmatist intervention. Instead of working on an ontology of sentience or developing a new model of consciousness that can be extended to all living beings, I first opened up the problem of sentience and then worked with it through a participatory ethics of sentience. This also has crucial ethical implications. So I wish to conclude by stressing the concrete relevance of tackling the problem of sentience. My approach implies that we are responsible towards sentient beings as sentient beings by answering to our sentience. Instead of assessing sentience from the outside, my approach stresses the need to be responsible for sentience as a member of a sentient participatory community.

I see in this a valuable answer to the crises of responsibility we are experiencing today, particularly the crises of extinction and biodiversity loss. The role of human agency in the transformation of the Earth is the key aspect of the Anthropocene, our geological epoch, and it is hard to deny that the ecological crises we are experiencing are independent of human agency. I do not have the space to develop this point here, but I want to stress that a participatory approach to sentience can help in motivating and supporting our environmental responsibility. This is because, by acknowledging sentience from the experience of partaking sentience, human beings can find that, for instance, biodiversity loss matters to them – not as an external problem but as an existential concern. But this concern would not be theirs alone, because acknowledging sentience from the experience of partaking sentience means engaging with other organisms and environments as a member of a sentient community that, in the case of biodiversity loss, is in danger. This felt awareness of the precarity and vulnerability of our life can motivate responsible environmental behaviours, at different levels, from the management of household waste to political and institutional actions.

It might be argued that focusing on an existential concern for endangered species, for instance, can boost environmental anxiety and grief, which are now among the most worrisome clinical conditions among young people. It might be added that this could lead to inaction, not to responsible environmental behaviours. There is this risk, true. But, again, this happens when concern is understood in an individualistic manner. A participatory ethics of sentience implies the need to reply responsibly to our existential concerns in a participatory manner – not on one's own. It is not just *my* concern; it is *our* concern. Participating in sentience, then, is also participating in joint responsible actions. This can be instantiated in a responsible way of inhabiting a place (Candiotta, 2022). As Tim Ingold claims, the inhabited world is sentient (Ingold, 2011). I therefore conclude with a question that, I hope, will kindle more

³⁵ This can take the shape of moral attunement, ethical know-how and consciousness raising. I cannot dive deeper into it here, but see Di Paolo and De Jaegher (2022) and Weichold and Candiotta (2023).

interest in and concern for the problem of sentience. How should we inhabit our sentient worlds?

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