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Optimism about measuring animal feelings

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Abstract: In a recent article, Rowan et al. (2022) have expressed scepticism about our ability to accurately measure animal feelings. Here, we argue that evolutionary considerations about the functions of feelings might give us more reason for optimism, and outline a method for how this might be achieved.

Keywords: animal sentience, animal feelings, measurement, consciousness, philosophy of science

Rowan et al. (2022) have provided a thorough review of the history of the concept of sentience, and its use in policy and animal advocacy. Here, we add a suggestion we think might strengthen the discussion on feelings and welfare assessment. Like the authors, we agree that animal welfare consists in the feelings of animals – the positively and negatively valenced mental states that are consciously experienced (see Browning 2020 for a defence of this welfare concept). But while the authors think that research into animal feelings "brings with it a huge, almost insurmountable problem, which is that it is very difficult (and maybe impossible) to prove conclusively that any organism is sentient. Subjective feelings are just that— subjective—and are available only to the animal (or human) experiencing them" (p.5), we contend that there is reason for more optimism on these grounds.

We agree that measuring subjective feelings may be difficult, but not that this creates an insurmountable problem. After all, animal welfare science has spent a good part of the last two decades moving towards studying these experiences. The study of animal emotions is well-established (e.g. Désiré et al. 2002, Mendl & Paul 2004, Kremer et al. 2020), but the primary difficulty is still in distinguishing conscious, or felt, emotions, from the unconscious – a problem that has led some researchers to abandon the project entirely, in favour of other methods of assessing welfare (Dawkins 2021). However, we think there are ways to make progress on this question.

While it is true that feelings are subjective, we should expect them to have detectable effects. As the authors rightly note, animal feelings have evolved to play a role in animals' lives, i.e. by providing a fitness benefit (examples of plausible accounts can be found in Dawkins 1998, Fraser & Duncan 1998, and Veit 2022). However, if Rowan et al. accept the common view that sentience provides animals with an evolutionary advantage, this would only have been possible if the presence of these feelings changes the animals' phenotype in some way that is 'visible' to selection. Such a view rules out the possibility of the feelings being epiphenomenal, i.e. a causally inefficacious byproduct of other cognitive processes. If these experiences have effects, then – at least in theory – we will be able to measure them. The question then shifts from if to how.

Once we start building on the assumption that we can find ways of studying animal feelings, we can broaden our empirical toolkit. Animal feelings should produce a range of detectable changes in neural processes, physiological functioning, and behaviour. The authors list a couple of approaches within the behavioural domain, including preference and motivation testing, and vocalisations. Beyond just the testing of how aversive (or pleasurable) an animal finds an experience, we may have means of assessing some of the qualitative features of these experiences – what it is like for the animal. We can develop tools for the identification of the presence and strength of different feelings in animals, based on their unique physical and behavioural signatures.

An example of this can be seen in the recent work on identifying markers of pain experience in cephalopod molluscs and decapod crustaceans, of which one of the authors of this commentary (HB) was a part (Birch et al. 2021, Crump et al. 2022). Beyond simply ascertaining the presence of sentience in these taxa, this work aimed to specifically identify a diverse set of physiological and behavioural markers that demonstrate the presence of pain experience, which could then be applied to identify this capacity in other taxa. A similar approach could be fruitful for other types of feelings. There has been a recent shift toward thinking about consciousness in terms of its dimensions rather than merely its presence or absence (Birch et al. 2020). The same is possible for an investigation of the valenced or 'evaluative' experiences of animals that matter for animal welfare. Rather than asking does an animal have feelings (i.e. is it sentient), we could instead be asking what feelings it has. As the research on animal sentience in understudied organisms (like crustaceans) has shown, a lack of evidence for sentience-related behaviours is often simply caused by the absence of relevant research. What is required is a deeply comparative approach across the animal tree of life that attempts to measure to quality and features of evaluative experience.

By developing such a mid-level approach that aims to generate a battery of tests and tools for measuring and assessing the range of animal feelings, we should be able to shape specific recommendations regarding policy, protections, and best-practice husbandry. As Rowan et al. note several times, it can be contested as to what the actual current impact has been of the recognition of sentience. While there are many potential ways recognition of sentience may have effects on treatment of animals (Browning & Veit 2022), it is not yet clear to what degree this has been realised. While it is heartening to see the expansion of formal recognition of sentience in animal welfare and protection legislation around the world, it is unfortunately still unclear what this will mean for animals in practice. In particular, many of the animals used in agriculture have long been widely recognised as sentient, and yet still undergo a wide range of sufferings and deprivations. While a focus on recognition of sentience is important, it will only be effective if accompanied with real change in policy-making and our responses to animals. It is crucial not to let the recognition be merely symbolic, and instead use this as the basis for advocating for better welfare protections for animals, with proper recognition of the empirical data on subjective wellbeing of these animals. Understanding the range and types of feelings an animal has the capacity to experience, and under what conditions, can thus help shape these more direct protections and ideally lead to improvements in animal welfare. But importantly, we want to emphasize that there is no reason to be pessimistic here. Science has best advanced by taking an optimistic approach towards complex challenges and we think the science of animal feelings can be similarly productive.

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