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Zones of precaution

Commentary on [Mikhalevich & Powell](#) on *Invertebrate Minds*

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Abstract: My commentary focusses on Mikhalevich & Powell's criticisms of the Animal Sentience Precautionary Principle. I emphasize the pragmatic nature of my rationale for proposing that, rather than extending the scope of animal welfare protection on a species-by-species basis, we should be willing to protect entire Linnaean orders on the basis of evidence from a single species.

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Section 4.2 of Mikhalevich & Powell (2020) (M&P) continues the discussion of my own target article on the Animal Sentience Precautionary Principle (ASPP) (Birch, 2017a). I'm happy to see the discussion continue, but I also feel I should answer the criticism.

Linnaean orders revisited. One of the proposals of my target article had been that, rather than extending the scope of animal welfare protection on a species-by-species basis, we should be willing to protect entire Linnaean orders on the basis of evidence from a single species. I suggested that although the Linnaean categories have largely fallen out of favour among taxonomists they still have a legitimate use in formulating animal welfare policy, because they classify animals at a pragmatically useful grain of analysis for the purpose of taking reasonable precautions. For example, if evidence of sentience is found in one species of octopus, this justifies taking precautions for all species in the order Octopoda. Adamo (2017), Stauffer (2017) and Mallatt (2017) criticised this idea in their commentaries, and I replied in my Response (Birch 2017b, p. 7).

M&P (p. 17) object that:

"Although Birch does not state it explicitly, this justification can only be partly practical — the other part must be theoretical, grounded in a two-fold hypothesis about homology: first, that the last common ancestor of the 'order' (more accurately, the order-level clade) was sentient, and second, that the conservation of sentience is more likely than its loss in a given order. Both these assumptions need to be defended."

I don't think M&P succeed in showing that I rely on these assumptions. I need only the assumption that if evidence of sentience is found in one species then the probability of sentience in other species of the same order is thereby raised—and that this upward shift in the probability of sentience pragmatically justifies taking precautions.

The evidence justifies precautions *pragmatically* in roughly the same way that our evidence about the transmission of covid-19 pragmatically justifies social distancing of 2m. There is nothing magical about the length of 2m, but it happens to be a distance that is easy to implement because the metre is a widely understood unit (in the US, of course, they deal in yards). Linnaean orders play a role similar to that of the 2m rule. They create a taxonomic "zone of precaution" around the species in which evidence of sentience has been found. They do so in a thoroughly pragmatic but useful and easy-to-implement way.

Other criticisms. M&P then proceed to a second concern: "the generalization only kicks in if a morally relevant mental capacity can be reliably attributed to at least one taxon within a given order".

To be clear, the ASPP is formulated in terms of sentience, not "morally relevant mental capacity." What is required is evidence of at least one credible indicator of sentience. M&P point out that it will often be contested whether a credible indicator of sentience has been found, and this is true. This challenge is discussed Section 4 of Birch (2017b) and again in Birch (2018a). There is no easy solution: the only solution is to produce a careful list of credible indicators of sentience, ideally a list on which sceptics can agree. I continue to think that learned, noxious-stimulus-dependent self-delivery of known analgesics (such as opioids) is an example of a credible indicator of sentience in an animal. It shows the presence of an integrated, flexible evaluation system for managing responses to noxious stimuli. Self-delivery by itself might simply show addiction, but self-delivery conditional on a noxious stimulus shows flexible reevaluation of the drug in a way that depends on whether a noxious stimulus is present (Bowers 2016).

A third criticism is that I focus too much on pain, neglecting the possibility of "rich inner worlds that lack traditional markers of pain". I have written elsewhere about markers of conscious perception in invertebrates (Birch 2020) and about ways to manage risk of over-attribution and under-attribution for other mental properties (Birch 2018b). In the specific context of formulating ASPP, however, it seems to me that a focus on aversive experiences is appropriate. This is because a precautionary framework should focus on mitigating serious welfare risks.

A fourth criticism is that I pay "inadequate attention to the moral costs that could flow from acting out of precaution" (p. 18). M&P add:

"If these costs are likely to be substantial — for instance, because erring on the side of caution would significantly interfere with or constrain research designed to benefit humans or other sentient animals — then aspiring to more targeted judgments about the presence of morally relevant cognitive properties may be more ethical." (p. 18)

I think it's enough to say that my proposals already involve a considered judgement about where the "zone of precaution" should be drawn for practical purposes if we wish to manage welfare risks in a precautionary way while also being led by the evidence. The costs of acting from precaution were discussed in Section 5 of Birch (2017a) and in Birch (2018a). If critics want to

argue that making precautionary attributions of sentience at a finer grain of analysis (e.g. to a particular species of octopus, but not to the Octopoda in general) "may be more ethical", I encourage them to make a more specific proposal so that a serious comparison of the merits of different proposals can be made.

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