Reviewer’s report

Title: VALUE PLURALISM IN RESEARCH INTEGRITY

Version: 0 Date: 13 Apr 2019

Reviewer: Michael O'Rourke

Reviewer's report:

This is a helpful paper that foregrounds a number of challenges confronting both those who seek to write codes of conduct and those who wish to follow them. I believe the paper should be published, but I think there are still things to do that would strengthen it.

Specific comments by page number:

3. It seems odd to me that the Introduction section follows the Background section. I would switch them, modifying the beginning of the Introduction slightly to reflect its new position. The Background section can be moved almost intact.

5. You call the pluralism you discuss "value pluralism", which either suggests that you can reduce all of the different "kinds of things one finds in codes of conduct" to the kind of thing you later call "values", or that you are using 'value' in 'value pluralism' differently than you do when you are talking about values as they appear in codes of conduct. The former conflicts with your metaphysical pluralism, which suggests to me that you are using the term 'value' ambiguously in this paper. I would encourage you to tighten this up. (Maybe refer to it up here as *axiological pluralism*?)

5. It would be good to link to the codes of conduct you utilize so that the reader can review them quickly.

7. The conception of *values* that is operative in §2 is unclear to me. The sugar content in honey makes it desirable. Does that mean the property of having that sugar content is a value? Or that the way that person's features are arrayed on their face makes them have great worth (say, as a model) - does that mean that the property of having features arrayed in that way is a value? Also - to say that values are universals suggests that they are good-making properties that are *universally* good-making, but surely there are many things that are regarded as values that are historically and culturally bound. Why not make values explicitly relative to people, e.g., that something is a value if it is a property of a thing that explains why (some) people prefer that thing over others? Or perhaps that explains why (some) people regard that thing as important?
10-11. Actually, 'respect' shows up on the values list (viz., the Australian code, p. 7) and the virtues list. It seems to me that *good stewardship* could be a value - it is something that, say, a community might value in their leaders, or in a natural resource agency. In fact, it seems like if values and virtues come apart, it is in the other direction. For any virtue, it will likely be that there are people who value that quality in other people, therefore making it also a value. But there will be things people value that aren't virtues, e.g., valuing flammability in a piece of firewood.

12. The last paragraph in §2 is opaque. Could you elaborate it a bit more? Why does *concreteness* help us better understand the epistemic/moral/legal/social/professional distinction?

12. At the beginning of §3 you say that the five categories of norms, but above (p. 6, end of Intro), you say that "these things" can be classified into five categories, where "these things" refers also to values and virtues. Does the five-part axiological distinction apply to more things than just norms? If so, you should indicate that here and perhaps adumbrate how this distinction manifests in connection with those other metaphysical categories.

16. The meta-norm strikes me as a social norm, where the social group in question is the research team. One could argue that the "wellbeing and flourishing" of a research team depends on the collective commitment to upholding the norms of research integrity.

18. At the beginning of §4, you seem to distinguish clearly between *incommensurability* and *conflict*, but at the top of this page you discuss your first example of incommensurability in terms of conflict. If they are incommensurable, do they really conflict? Aren't they just "apples and oranges", so to speak?

18. The professional norms you list do not "tell us *not* to "disclose as much as possible". In fact, I don't really see any substantive difference between the epistemic and professional norms you quote in terms of their commitment to open disclosure. The first norm in each set urges an openness that is constrained by reasonable considerations. These examples do not bear out what you claim on line 34.

18. You assert that the epistemic and professional norms do not "map onto one common scale", but you do not argue for this. To my eye, all of the bullets on this page (i.e., the professional norms) and the previous page (i.e., the epistemic norms) seem fully commensurable, so I must be missing something. A detailed argument that shows the incommensurability would go a long way to making this more clear to me.

19. That norms "pull in different directions" is not sufficient to establish incommensurability. And must there be a *uniquely* correct way to balance the two for them to be commensurable? Here again, a more detailed argument that draws on the details of specific incommensurable norms is needed to establish your conclusion.
20. You say at the beginning of §5 that conflicting norms in a single category present a "second type of axiological pluralism", but that strikes me as an odd way to put it. Initially, you argue that axiological pluralism is grounded in the five types of norms - you need to be a pluralist about these because they are not reducible. Incommensurability across these categories (and perhaps also within them?) and irresolvable conflict within them are different reasons why one must be a pluralist, but do they really correspond to types of pluralism? Perhaps so, but there appear to be at least three different things at work in the axiological discussion that could be clarified from my perspective: the five categories, incommensurability as an argument for irreducibility, and irresolvable conflict as an argument for irreducibility.

21. I don't understand how the third bullet works to help us avoid false belief? Your note references the first two bullets here (viz., negative results and bias), but not the third bullet. Maybe just elide it?

24. I'm a pluralist, so I don't think you need to *overcome* it. Why not see pluralism as a good thing - as a reflection of the complex normative landscape of scientific practice? If anything, this is a reason to embrace it. Anything monistic would be too simple to do justice to this complexity.

26. The point you make about values leading to norms seems to belie the claim you make above that norms and values must be regarded as different metaphysical categories. Here, though, you seem to be suggesting that values are more basic than norms and that perhaps norms could be reduced to them.

27. What exactly does the recommendation of intellectual humility amount to? That we should be careful? Circumspect? Look for multiple different arguments for our conclusion? It would be helpful to learn more about how we should operationalize this in practice if we are to embrace it.

27. (2) in the conclusion seems to conflict with the second sentence in the last paragraph of the Introduction on p. 6.

A few general comments to conclude:

(1) It would be very helpful if more care were taken in how the terms 'value', 'norm', and 'virtue' were used in the article. There are a few places where it seems like we are supposed to infer reducibility, but that seems at odds with the metaphysical pluralism that is part of the view.

(2) I wonder if it would help to include a table that perhaps gave examples of norms in each category? So a 3x5 table (norms/values/virtues X epistemic/legal/social/moral/professional) with examples from the codes. Of course, if the 5-part distinction really does only apply to norms, this would not be appropriate.
Alternatively, perhaps a table that represented the complex structure of axiological pluralism might be helpful. A more visual display of some of the results would help me.

(3) More time should be taken to set up the incommensurability vs. conflict sections at the end, and then more time should be taken in establishing incommensurability and conflict in each of the cases.

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