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Commentary on “Explicating and Negotiating Bias in Interdisciplinary Argumentation Using Abductive Tools”

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1. Introduction

Global problems such as poverty, migration and climate change require interdisciplinary inquiry and solutions. In recognition of this need, interdisciplinary approaches are beginning to be privileged in research funding policies and decisions, and in pedagogies favouring problem-based and experiential learning. It is timely, then, to focus attention, as this paper does, on the reasoning involved in interdisciplinary inquiry and on what can be done to facilitate and nurture successful interdisciplinary inquiry.

As the author describes it, interdisciplinary inquiry will usually involve the integration of information from a, possibly diverse, range of disciplines to generate alternative explanations followed by the determination of which of those explanations is the best one. Thus, a principal reasoning move in interdisciplinary inquiry is inference to the best explanation. Making those inferences presents a particular challenge given that each disciplinary inquirer will bring a different perspective to the inquiry, contribute different types of data gathered via different means and measured and evaluated according to different scales and standards. The author draws on her own involvement in interdisciplinary projects to provide two case studies of interdisciplinary inquiry in action. The paper is very relevant given the extent to which real-world inquiry needs to be interdisciplinary, and I found it interesting and thought-provoking. In the main, my comments are intended to suggest elements of the paper that seem ripe for further expansion or give rise to further questions for reflection and investigation.

2. Not just the best explanation

The author identifies inferences to the best explanation (hereafter IBE) as the main reasoning task of interdisciplinary inquiry. Yet, as she notes in her discussion of her second case study, the assumption that any one of the explanations proffered from the perspective of a diverse group of disciplines could be the best of the bunch is unhelpful to the inquiry for it drives us back to a monodisciplinary approach. Instead, her own approach was to integrate the various explanatory narratives into a single narrative that offered a holistic explanation of the rigid division of information and collaboration between forestry and agriculture experts. This example demonstrates how it is possible to come to an explanation that enables us better to understand the problem at hand. However, once we have gained an understanding of a problem, our inquiry, including, perhaps, especially, interdisciplinary inquiry, also aims to offer solutions to that problem. Take for example the practice of making a medical diagnosis and then arriving at a treatment decision. The reasoning involved in coming to diagnoses consists primarily of IBE drawn from a variety of data including the patient’s symptoms, various tests such as blood tests,
ultrasound scans, CAT scans, cardiograms, and so on. Just this wide variety of tests and their related measures and standards demonstrates the way in which medical diagnoses are often interdisciplinary inquiries. Arriving at a correct diagnosis of a patient’s condition will often require the input of more than one physician in order to conclude which interventions will offer the best approach to curing or managing the patient’s condition. In the case of a cancer diagnosis, for example, the inquiry and resultant solution may well involve (at least) a surgeon, a radiologist and an oncologist working in concert to offer a complete treatment plan. In the medicine case the members of the community of inquiry first bring relevant concepts, methods, measures and standards to bear to reach an explanation of the patient’s symptoms that weaves the strands of their individual explanations into a single account or story of what’s going on with the patient. On the basis of that interdisciplinary account, they move forward to find an interdisciplinary solution that enables them each to bring to bear their expertise in the best interests of the patient. While there are no doubt moments of disagreement and contest in communities of inquiry in the medical profession, they do, it seems to me, offer a potentially rich source of both case studies and sites for further investigation and reflection on interdisciplinary inquiry and problem-solving. Moreover, these communities of inquiry may well employ inquiry tools that could be deployed more widely in interdisciplinary inquiry.

The medicine example also illustrates the way in which successful interdisciplinary inquiry and problem solving brings together partial explanations into a productive whole. Each inquirer in the community views the problem at hand through a lens particular to their discipline. Their lens enables them to pick out features of the situation that are salient from within the conceptual and methodological framework of that discipline. They interpret data, make measurements and apply standards all from within that framework. Thus each individual’s inquiry, as the author notes, is partial. It is partial in two respects. It is not impartial, it comes from within a particular framework and an inquirer will feel naturally inclined towards, at home within, the narrative generated from within the horizons of her own disciplinary outlook. But it is also partial in the sense that it tells us only part of the complete story about what’s going on in the case at hand. By bringing together each of these partial stories and creating a closer-to-complete story, we arrive at a better explanation than we are likely to have had we confronted the problem at hand from a single disciplinary perspective.

In discussing her own solution to the problem of combining diverse explanatory narratives to generate a single, more complete, explanation, the author mentions (i) storytelling as a form of argument and (ii) a ‘story with an argument.’ It wasn’t clear to me whether she was distinguishing these, but nevertheless, the questions of the relation between narrative and argument and the role that narrative might play in argument within an interdisciplinary (indeed, any) community of inquiry are intriguing ones that invite further reflection, discussion and investigation.

3. Bias

The author notes that the risk of bias is bigger in interdisciplinary contexts. She provides a discussion of various biases that can occur in the context of interdisciplinary inquiry – biased choices of which process(s) to test, biased choices of which process counts as the best explanation – as well as familiar cognitive biases such as convenience bias and confirmation bias. I wondered whether, when biased reasoning occurs, it tends to manifest as bias in favour of the meanings, measures and standards of one’s own discipline. On the face of it, in the case of confirmation bias, that seems likely since, faced with reasoning through an array of methodological choices, inquirers
are more likely to err on the side of the expected rather than the unexpected and an inquirer’s expectations will be embedded in her discipline. In the case of convenience bias, however, it seems less likely (though not necessarily unlikely) that an inquirer will err towards her own discipline if the explanation offered by another discipline presents an easier choice, or, as the author describes, she is simply facing investigation-fatigue. While the danger of bias is clear and present, it may be that bias is easier to detect and deal with in disciplinarily-diverse communities of inquiry. When an inquiry is interdisciplinary, differences in the concepts, methodologies, measures and standards of each discipline are more likely to be thrown into relief and to be foregrounded and negotiated than they are in the case of single disciplinary inquiries in which we can remain blinkered to the frameworks in which we are operating. So while bias remains a danger, I suggest the fact that within interdisciplinary inquiry the conceptual and methodological markers of each discipline are on the surface means that it becomes easier to identify and negotiate bias.

4. Bridging the communication-reasoning gap

My penultimate points concern what the author describes as a gap between reasoning and communication, together with her claim that group discussion can mitigate biases. I suggest that a virtues-oriented approach to good inquiry may offer a productive means to bridging that gap. A virtues oriented approach to inquiry takes an agent-centred turn, making what constitutes good inquiry a matter, or partly a matter, of whether inquirers manifest certain characteristics. These virtues include reliabilist virtues such as perceptual abilities, observational skills and the ability to reason deductively and inductively; and responsibilist virtues such as open-mindedness, fairness, epistemic humility, perseverance, the ability to recognise reliable authority, intellectual courage and autonomy. A number of the responsibilist virtues are particularly relevant to the types of group inquiry that occur in the context of interdisciplinary communities of practice. Striving to be open-minded can help inquirers to remain open to explanations they had not previously thought of even when they are at odds with explanations generated with their own discipline. By remaining open to possibilities other than those to which she is already committed, the open-minded inquirer can thus be less prone to bias in favour of her own discipline. The inquirer who strives to be epistemically humble will avoid assuming that her own discipline is in some way superior to those of other enquirers and be open to learning from and working alongside, or within, those other disciplines. The inquirer who is diligent and prepared to persevere in her inquiries is less likely to fall prey to convenience bias. The inquirer who possesses and displays intellectual courage will be well placed to negotiate value choices and to take on board better explanations from disciplines other than her own even when it means putting her own explanations to one side. While I have only provided a brief sketch of the role that a virtues-oriented approach to good inquiry might play in thinking further about effective interdisciplinary inquiry, it is, I think, sufficient to demonstrate that there is rich potential in this approach with respect to confronting both the reasoning and communication challenges in interdisciplinary inquiry. For it is an approach, an advantage of which is that it enables us to focus and reflect upon relations between inquirers qua inquirers.

1 The list of responsibilist virtues is drawn from (Zagzebski p. 114)
2 For examples of the virtue-theoretic approach to argument see, (Aberdeen 2010, 2014); (Battaly 2010); (Paglieri 2014). For an example of an approach that see a role for virtue in accounts of good reasoning but not as constitutive of good argument see (Bowell & Kingsbury 2013; 2105).
5. Conclusion

Interdisciplinary work takes place not only at the intersections of disciplines, but also in the interstices, in the often as yet unnamed spaces between disciplines, from which new sites of inquiry and research questions arise. This sets us further challenges beyond understanding and negotiating the interplay of diverse interdisciplinary voices. It requires us to inquire into newly created disciplinary spaces requiring the negotiation of their own concepts, methods, measures and standards.

References