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Dear Chair and Members of the Search Committee,

I am applying for the position of Assistant Professor in the Department of Philosophy at the University of Toronto. I completed a PhD in philosophy at Columbia University (2016). I am currently a Postdoctoral Research Fellow in the Department of Philosophy, University of Warwick. My research is in metaphysics, philosophy of science and philosophy of physics.

My dissertation, *A Deliberative Account of Causation: How the Evidence of Deliberating Agents Accounts for Causation and its Temporal Direction*, investigated causation's place in science by considering its relevance for deliberation. Fundamental physics makes no use of causal notions; it uses laws that work relevantly well in both temporal directions and that relate whole systems at different times. I argued that we make sense of causal relations by relating them to the evidential relations of use to deliberating agents. According to a deliberative account, causal relations correspond to the evidential relations agents use when they decide on one thing in order to achieve another. The raising of the water temperature, for example, is a cause of coral bleaching, if and only if *deciding* to raise the water temperature is grounds for thinking there'll be coral bleaching. The account explains why causation matters: knowing causal structure directs us to decisions that are evidence of outcomes we seek. The account also uses features of deliberation and entropy to explain why causes come *before* their effects, providing a new way of deriving causal asymmetry from temporally symmetric laws.

This deliberative account shows a third way between objectivist and agent-based accounts of scientific relations. Agent-based accounts are typically taken to imply subjectivism; objectivist accounts don't aim to explain why relations should matter. The approach demonstrates an alternative strategy for doing scientifically informed philosophy: use agential standards to pick out objective relations, relate them to fundamental physics and explain their temporal features.

Four papers have resulted from this research. One paper, 'A Deliberative Approach of Causation', is forthcoming in *Philosophical and Phenomenological Review*. A second, 'Varieties of Epistemic Freedom' (2016) appears in the *Australasian Journal of Philosophy*. A third, 'Time, Flies, and Why We Can't Control the Past', is in press in an edited volume, *Time's Arrows and the Probability Structure of the World* (Harvard University Press). A fourth paper is under review.

My most recent work in this area uses time travel cases to explore temporally neutral methods of evaluating counterfactuals and abilities. I've presented this work at refereed conferences, including the American Philosophical Association Pacific Division Meeting (2017) and the UK's Joint Session (2016). One paper is under review, and an additional paper is being prepared for submission to *Noûs*. I pursue related research on the AHRC project 'Time: Between Metaphysics and Psychology', where I examine how young children develop

concepts of a fixed past and an open future, and the role of metaphysical pictures in explaining asymmetries in how we value the past and future.

My second major research project, *Chance in a Physical World*, investigates the place of objective chance in science by considering its role in guiding belief. We use chances to reason about the past and future. Candidate laws of fundamental physics are also, in important respects, temporally symmetric. Yet influential accounts of chance merely presuppose chance's temporal asymmetry: that events in the past have only chances of 1 or 0. This project develops a temporally neutral account of the role of chance and then applies the account to different physical theories to identify what chance may be, and explain its temporal features. I've presented a paper based on this research at the Society for the Metaphysics of Science Annual Conference (2017), and a second by invitation at the Second Law of Thermodynamics Conference, Munich Center for Mathematical Philosophy (2017). I will approach Oxford University Press regarding publication of a monograph and submit a lead paper to *Mind*.

My research methods guide my approach to teaching. In my courses, students examine tensions between our practical, scientific and everyday points of views and think through the problems that arise. They thereby learn skills to negotiate conflicts in areas of thought far beyond the philosophy classroom. In *Time Travel, Free Will and Causation* students map and analyse the causal structure of time-travel movies such as *Bill and Ted's Excellent Adventure* using the online platform Mediathread. In discussion they then examine whether agents can act freely when they travel back in time and meet their former selves, and so what aspects of the physical world are required to sustain our sense of freedom. In an introductory philosophy of science course I've developed, students use case studies of the development of the atomic bomb and climate change to explore the role of values in science. By doing so, they learn to question an easy view of theoretical objectivity. I have taught undergraduate metaphysics, and a graduate course in philosophical methodology. I'm prepared to teach a range of courses drawing together practical, theoretical and historical topics, including advanced epistemology (*The Practice of Knowing*), introductory philosophy of physics (*The Aspirations and Limits of Physics*), and graduate seminars (*Realism and its Rejections in Science and Ethics*).

Toronto's strengths in metaphysics and philosophy of science make this a particularly appealing position for me. I would enjoy collaborating or co-teaching with faculty such as Jessica Wilson on the relations between scientific and metaphysical emergence, as well as Franz Huber on confirmation, induction and chance. I can also envision strengthening ties to the History and Philosophy of Science and Technology Institute by developing a graduate course on realism and values in science, as well as strengthening ties to the Department of Physics and the Department of Psychology by organising a research seminar on the metaphysics and science of time.

Thank you for your time and consideration. I look forward to hearing from you.



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