Inland Northwest Philosophy Conference XVIII
Philosophy of Science – Inside and Out
Schedule and Description of Talks

Thursday, July 31st

Philosophy as Boundary Work: Issues from the Toolbox Project (Keynote)
Michael O' Rourke (Michigan State University)
Graham Hubbs (University of Idaho)
Chad Gonnerman (Michigan State University)

Counterlegal Dependence and Causation's Arrows

Tyrus Fisher (UC – Davis)

Some sentences express empirical regularities that are held fixed relative to the linguistic context they are interpreted by; call such sentences laws. A counterlegal is a counterfactual containing an antecedent that is inconsistent with some law. A backtracker is a counterfactual that tell us how things would be at a time earlier than that of its antecedent, were the antecedent to obtain. Typically, theories that handle counterlegals appropriately handle backtrackers poorly, and vice versa. Two cases in point: Lewis' (1979) ordering semantics handles counterlegals well but not backtrackers. Hiddleston's (2005) causal-model semantics handles backtrackers nicely but not counterlegals. Taking Hiddleston's account as a starting point, I offer steps toward a unified theory capable of handling both counterlegals and backtrackers. The core contribution of this paper is a means for evaluating counterlegals relative to minimally-illegal models.

Giving up on Theories and a New Puzzle for Theory Base Revision

Ted Shear (UC – Davis)

In this paper, I provide some reasons why various practitioners might be inclined to stop relying on the notion of a theory provided by mathematical logic and why it is often preferable to rely on what have come to be called theory bases. In mathematical logic, a theory is a set of sentences of some language closed under a consequence relation. The logic of theory change has been extensively explored under the dominant AGM approach. The most straightforward application of this logic has been in AI where a theory is taken to be the belief set of an agent. There are a number of well known problems with the utilization of belief sets to represent the epistemic state of an agent. I will highlight a number of those problems and suggest that they can be adequately resolved by taking the epistemic state of an agent to merely be a belief set -- or a set of sentences not closed under consequence. Relying on belief sets requires a new logic to model the dynamics of epistemic change. I will describe such a logic that has been developed in the literature and will demonstrate a new puzzling result for the logic of theory base change. In particular, I will show that there are certain inconsistent theory bases that can only be made consistent by revising them in a way that removes truths.

Logical Problems and the Theoretician's Dilemma

Hayley Clatterbuck (UW – Madison)

The "theory theory" is an increasingly popular account of human cognition, according to which humans utilize intuitive theories which change and develop with evidence in a process very closely analogous to the development and change of theories within scientific practice (Gopnik and Wellman 2012, Carey 2009). These intuitive theories are abstract, coherent representations of the world's causal structure and often posit unobservable entities, properties, and relations to explain and predict observable regularities. Additionally, many proponents of the theory theory have suggested that it is this capacity to reason about theoretical entities, properties, and relations which distinguishes human from animal cognition and is responsible for many unique human behaviors, including language, sophisticated tool use, and complex social knowledge, including theory of mind (Penn and Povinelli 2008, Morgan 1896, Karmiloff-Smith 1995). I will call this general view the theory theory of human cognition.

In order to be a plausible account of cognitive discontinuities between human and animal minds, the theory theory of human cognition must offer satisfying answers to the following questions:

(a) What is the unique epistemic function of theories such that a theory user is capable of behaviors that she would not be capable of performing if she lacked a theory, and how do theories perform this function?

(b) How could we know whether a subject is a theory user or not?

First, since the theory theory of human cognition is committed to the claim that theories fulfill some unique and important function that could not be fulfilled by representations of observable regularities alone, it is incumbent upon its proponents to specify what this function is and how theories unique satisfy it. Second, she should specify what would count as evidence for its claims that the capacity to theorize is central to human cognition and that animals lack that capacity. To answer either of these questions, she must specify how theory use manifests itself in behavior.

In this talk, I will consider two arguments that raise significant obstacles to the theory theorist's ability to give satisfactory answers to these two questions. The first is the "logical problem" within comparative psychology, which purports to show that no (existing) experiment could provide evidence, even in principle, of the presence of theoretical beliefs within non-human subjects (Povinelli and Vonk 2004, Penn and Povinelli 2007). The second is the theoretician's dilemma within the philosophy of science, which purports to show that theories play no unique epistemic role and are thus unnecessary (Hempel 1965).

Interestingly, though these two arguments have targeted different claims, they share deep similarities. Once their common structure is been made explicit, I will argue that there are important disanalogies between the two. Then, I will construct a version of the theoretician's dilemma that, paired with the logical problem, presents a serious challenge to the theory theory of human cognition. Lastly, I will draw on philosophical responses to the theoretician's dilemma to suggest ways to defend the theory theory of human cognition against this attack.

Economics and the Self-Fulfilling Climate Tragedy

Matthew Kopec (Northwestern)

It has become common practice within the economic literature on climate change to model the problem game-theoretically as a so-called "Tragedy of the Commons." If this choice of model is the correct one, we're in trouble – the conditions under which such commons problems have historically been "solved" are almost entirely absent in the case of international carbon emissions. While I believe that this model will support many accurate predictions, I don't believe this is necessarily a cause for concern. In this essay, I will argue that the predictive accuracy of the tragedy model stems from the model's ability to make self-fulfilling predictions within our current international setting. Each nation's expectation of self-interested actions on the parts of other members in the game, in effect, modifies each nation's behavior. I present some recent work in behavioral economics that offers a glimmer of hope. In particular, individuals don't typically act in what such models consider to be rationally self-interested ways. A call for nations to act irrationally, much like we all seem to do, may well be our best promise in solving the climate problem.

Friday August 1st

All Cause and No Effect Makes Taxa Dull Groups

Matt Barker (Concordia University)

Researchers focused on biological taxa typically agree that the Darwinian revolution long ago replaced an unevolutionary view of taxa with an evolutionary one. Indeed, if there is a widely acknowledged problem here, it is that we have too many well-developed evolutionary theories of taxa. I argue that this near consensus, rare in this area, is overly ambitious. At and below the species rank, we surprisingly lack a well-developed evolutionary theory of taxa. Over the past few decades, several influential theories of taxa have assumed that taxa are effects of evolutionary processes. But they have then focused on the causes of these effects at the expense of the effects themselves. Ironically this has delayed an evolutionary understanding of the effects—of taxa at and below the species rank. I discuss how this has helped lead related debates about both theoretical and applied issues into underappreciated confusion, how we might overcome the delay, and the puzzles we should expect to enjoy when doing so.

James contra Spencer: Environment and the Active Mind

Trevor Pearce (UNC – Charlotte)

In this paper, I demonstrate that William James's early work on evolution and psychology was framed almost entirely as a response to Herbert Spencer. All of James's characteristic ideas—selective interest and attention; consciousness as an adaptation; the environment as mere preserver of variation—were specifically anti-Spencerian. James was developing a kind of empiricism, but it was an empiricism that sought to preserve a place for the power and activity of the mind. As Peter Godfrey-Smith (1996) has shown, Spencer's emphasis on the external environment shaping the organism was directly countered by James's emphasis on the organism selecting its environment. Nevertheless, James followed Spencer in granting fundamental importance in psychology and philosophy to the relationship between organism and environment. The paper is divided into two parts. In the first, I describe Spencer's account

of the organism-environment relation and discuss how the other Metaphysical Club philosophers—Fiske, Wright, Peirce, and Abbot—responded to Spencer's ideas. In the second, I analyze James's early critique of Spencer, focusing especially on the relation between the mind and its environment.

Carnapian Conventionalism and Biology

Josh Filler (Ripon College)

In "Empiricism, Semantics, and Ontology", Carnap famously argued that ontological questions have objective answers. For example, if one asks the question "do tables exist", this question has an objective answer (i.e., its answer does not depend on what any particular subject thinks about the question). Carnap's interesting caveat is that the answer to this question, and any question like it, can only be provided from within a linguistic framework that has already been "decided upon". In a sense, the question itself cannot be asked unless we have a linguistic framework in which to ask it. But the choice of a linguistic framework is entirely conventional in the sense that our choice of linguistic framework is epistemically arbitrary. The only reasons one has to prefer one framework to another are pragmatic in nature; our choice of linguistic framework in no way reflects some antecedent and independent fact about the world. Hence, ontological questions admit of objective answers; yet, this objectivity is a limited, Carnapian objectivity.
In this paper, I argue that Carnap's way of understanding ontological questions and their answers is helpful in understanding and adjudicating three on-going ontological disputes in the philosophy of biology: the debate over whether evolutionary causes are best understood as forces, the debate over how to define biological groups, and the debate over whether random genetic drift is a cause. In particular, I will argue that the ontological questions asked in these debates have objective answer but only in the limited, Carnapian sense of "objective". But even if these debates are not as clearly Carnapian as I make them out to be, I argue that the Carnapian analogy is helpful in seeing not only that the disputants
are often talking past each other but also exactly where a kind of Carnapian conventionalism is creeping into these debates.

The Enigma of Normal and Healthy (Keynote)

Larry Forney (University of Idaho, iBEST)