

# University of Otago Summer Workshop in Philosophy of Biology 2011

## Programme

**Friday 9 December — The Seminar Room,  
Department of Philosophy, University of Otago  
(117 Union St East).**

1 pm

**Ben Fraser (Monash)**

**What distinguishes sexual selection from  
natural selection?**

Abstract: The relationship between natural selection and sexual selection has been a contentious issue since Darwin first proposed the distinction. Disagreement on the issue persists today, but while many prominent biologists have firmly expressed views, those views have rather flimsy justifications, and there is surprisingly little direct debate on the topic. Here, I consider the question of whether natural selection and sexual selection are distinct evolutionary processes. I assess arguments for maintaining the distinction, as well as arguments for collapsing it, and conclude that the distinction cannot, in the end, be maintained.



2 pm

**Carl Brusse (ANU)**

**Planets, Polysemy and Progress**

Conceptual change in science is generally driven by the progress of scientific understanding – in a more or less derivative manner. In some instances though, “progress-orthogonal” contingencies may impinge upon the orderly falling-into-line of scientific terms and concepts. This paper discusses the history of the term “planet”, as a case study which illustrates two such distractions: office politics, and revealed polysemy due to sub-disciplinary specialisation in a data-sparse environment. While the case I describe is fairly trivial, I argue that this kind of polysemy has a broader significance in the philosophy of science (and in philosophy in general), and that a greater awareness of the phenomena and (the practical issues it generates) is called for.

3 pm

**Afternoon tea**

3:30

### **Heather Dyke and James Maclaurin (Otago)**

#### **Evolutionary Explanations of Temporal Experience**

We begin with an overview of evolutionary explanations, distinguishing three different kinds: adaptations, exaptations and spandrels. We then examine five features of temporal experience, and suggest some plausible evolutionary explanations for them. Finally, we consider the implications of these evolutionary explanations for the veridicality of these temporal experiences, and for the truth-value of folk beliefs about time that are based on them.

### **Saturday 10 December — Orokonui Ecosanctuary**

10 am

Those needing transport to the Orokonui Ecosanctuary should meet at the Philosophy Department (117 Union St East).

10:30 am



### **Adrian Currie (ANU)**

#### **Shakespeare & the Sauropods or, how to be a realist about the historical sciences (and when not to be)**

**Abstract:** A scientific realist believes that science is progressive: that is, scientific development is a story of increasing verisimilitude. Being a realist about some area of scientific inquiry requires an epistemology of that domain. Hacking, for instance, grounded his realism about physics and chemistry in the role played by background theories which support the reliability of instruments. Derek Turner has recently argued for an anti-realist position about sciences which target pre-history (geology, paleontology and archeology) based on his view that they face two epistemic disadvantages compared to other sciences: (1) we cannot manipulate the past; (2) information from the past is frequently destroyed. In this paper I show that, even if Turner's claims of epistemic disadvantage are true, his conclusion of anti-realism depends upon an impoverished epistemology of the historical sciences. I show how a richer story about the relations between evidence and theory in the historical sciences leads to realism. I don't want to engender blind optimism, however: I close with a speculative discussion of when we should not believe that historical science is progressive.

11:30 am

### **Morning Tea**

12:00 pm

### **Ben Jeffares and Kirsty Douglas (ANU)**

#### **Distinguishing rhetoric from parsimony in the Australian Plesitocene extinction debate.**

One of the supposed virtues of a good theory is simplicity. The simpler theory often gains credence and respectability, and triumphs over the more complex theory. This often works in debate as well. The simple statement is more memorable, the simple argument more forceful. But theories and arguments are not always the same thing as an explanation, particularly of complex historical phenomena. The real world does not always pay much heed to the aesthetic sensibilities of mathematically inclined philosophers of science, nor to the sweeping statements of the high minded rhetoretician. To explore this, we present a case study of the debate over the extinction of the Australian megafauna. We show how the paucity of evidence has meant that the debate has been structured by a legacy of rhetoric and the grand narratives of geological thought. The debate is aggravated by the lack of a clearly articulated alternative model to human caused extinction. The result is that a potentially complex historical phenomenon is being reduced to bumper sticker slogans.

1 pm

### **Marjan Kljakovic (ANU)**

#### **Respecting the research realities of general practice: The problem of small numbers in general practice research**

Empirical research in primary health care faces some special challenges. The most obvious of these is the generality of general practice itself: specific disease groups present to general practitioners as a highly scattered sample. One of the jobs of a GP is to pick the unusual case from the routine. This paper argues GPs have a problem with prediction on the basis of small numbers. The study for this discussion centres on GPs picking cases of chronic cough from the array of routine cases of cough encountered in general practice. The problem is made relatively awkward for GPs working as clinical generalists, under the yoke of their hospital specialist colleagues defining what counts as a chronic cough and what counts as picking a case from which predictions are made.