



## NZCCRI Seminar Series

### Two talks by Dr Antony Millner

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#### Ambiguity and Climate Policy

Economic evaluation of climate policy traditionally treats uncertainty by appealing to expected utility theory. Yet our knowledge of the impacts of climate policy may not be of sufficient quality to justify unique probabilistic beliefs. In such circumstances, it has been argued that the axioms of expected utility theory may not be the correct standard of rationality. By contrast, several axiomatic frameworks have recently been proposed that account for ambiguous knowledge. In this paper, we apply static and dynamic versions of a smooth ambiguity model to climate mitigation policy. We obtain a general result on the comparative statics of optimal abatement and ambiguity aversion and illustrate this sufficient condition in some simple examples. We then extend our analysis to a more realistic, dynamic setting, and adapt a well-known empirical model of the climate-economy system to show that the value of emissions abatement increases as ambiguity aversion increases, and that this 'ambiguity premium' can in some plausible cases be very large.



**Date: Tuesday 14<sup>th</sup> February 2012**

**Time: 12.30 – 1.30 pm**

**Venue: Rutherford House, Lecture Theatre 3**

#### Reasoning about Catastrophic Climate Risks

How should economic analysis of climate policy account for the small but non-negligible possibility of climate catastrophes? Recent theoretical work by the influential Harvard economist Martin Weitzman suggests that 'fat tailed' probabilities of catastrophic climate change can trump all other factors (including the effect of time discounting) in climate policy analysis. In this view, the primary reason to advocate ambitious mitigation policy is as insurance against these low probability, high impact events. In this talk I will provide a critical examination of Weitzman's reasoning, and the assumptions that drive his results. I'll suggest that the strong implications of his "Dismal Theorem", which suggests that we should be willing to pay an unlimited amount today to offset future fat-tailed risks, are not a generic consequence of the climate problem, but rather indicate that the traditional tools of economic analysis are not up to the task of evaluating policies that have fat tailed consequences. I'll show how these economic tools can be modified to provide more sensible policy recommendations, and argue that accounting explicitly for population ethics is a key component of a more satisfactory approach to the analysis of catastrophic climate risks.

**Date: Wednesday 15<sup>th</sup> February 2012**

**Time: 4 – 5 pm**

**Venue: Alan MacDiarmid Building, Room 102**

Antony Millner is currently a Research Fellow at the University of California, Berkeley, and a Visiting Fellow at the Grantham Research Institute on Climate Change and the Environment at the London School of Economics. His undergraduate degree is in Physical Sciences from the University of Cape Town, and he has first class Masters degrees in Applied Mathematics and Theoretical Physics from the University of Cape Town and Cambridge University respectively. He earned a D.Phil. in Global Environmental Change from the University of Oxford in 2010. His research interests include environmental economics, choice under uncertainty, and the interface between science and economics in climate policy.