Faculty of Arts and Humanities
Department of Philosophy

KING'S College LONDON

Masterclass on Higher-Order Metaphysics *with Andrew Bacon*

Speakers

Masterclass given by **Andrew Bacon** (University of Southern California). Guest talks by **Jessica Leech** (King's College London), **Timothy Williamson** (Oxford) and **Nick Jones** (Birmingham).

Venue

Bush House, South-East Wing, Room (SE) 2.09.

Programme

Wednesday, May 8th

11:00-12:30, Andrew Bacon, masterclass lecture 1. *Introduction to functions and higher-order functions.*
14:00-15:30, Andrew Bacon, masterclass lecture 2. *Type theory and Higher-order logic.*

16:00-17:30, Jessica Leech, *Relative Necessity Extended.*

Thursday, May 9th

11:00-12:30, Andrew Bacon, masterclass lecture 3. *Propositional Granularity.*
14:00-15:30, Andrew Bacon, masterclass lecture 4. *Modality.*

16:00-17:30, Timothy Williamson, *Are Counterfactuals Hyperintensional?*

Friday, May 10th

11:00-12:30, Andrew Bacon, masterclass lecture 5. *Logical Necessity and Fundamentality.*
14:00-15:30, Andrew Bacon, masterclass lecture 6. *Substitution Structures.*

16:00-17:30, Nick Jones, *Type-Neutrality and Pattern Recognition.*

Masterclass lectures

Lecture 1: Introduction to functions and higher-order functions
Introduction to higher-order functions, Curried functions, combinators and applicative structures.

Lecture 2: Type theory and Higher-order logic
The lambda calculus and higher-order logic.

Lecture 3: Propositional Granularity
Theories of propositional granularity in higher-order logic. We will formulate the structural theory of propositions in higher-order logic and outline the Russell-Myhill paradox. We will then formulate and discuss a more coarse grained theory of granularity, Adjunctive Booleanism.

Lecture 4: Modality
Given the background of Adjunctive Booleanism, we will formalise what it means for (i) an operator to be a modality, (ii) one modality to be as broad as another. We will then show that there is a broadest necessity, and that it can be defined in logical (indeed extensional terms). A general model theory for Adjunctive Booleanism is outlined.

Lecture 5: Logical Necessity and Fundamentality
In this lecture I will present a theory of fundamentality, in higher-order logic, which substantiates the following ideas: (i) the fundamental properties an relations are freely recombinable, (ii) arbitrary properties and relations can be decomposed uniquely into the fundamental by logical operations. Both ideas will be seen to be closely connected, and surprisingly the second is consistent with Adjunctive Booleanism.

Lecture 6: Substitution Structures
In this lecture I will outline a class of applicative structures that are well-suited for theorizing about propositional granularity. I will indicate how the technology can be used to create models of the theory in lecture 5.

Organization and contact

Julien Dutant, julien.dutant@kcl.ac.uk.