

Titles and abstracts

Staffan Angere

Homotopy, well-foundedness, and ω -structuralism

Abstract:

Abstract: Structuralism, in a well-known form, says that entities are logically, psychologically, epistemologically, linguistically, or ontologically secondary to the relations they stand in. But what of the relations themselves? Are they secondary to the second-order relations they stand in? Does the same hold for second-order relations, and for relations of arbitrary high order? Someone who answers "yes" to this question I will call an ω -*structuralist*.

I will make some brief comments on why one might want to be an ω -structuralist, but the main part of the talk will be devoted to *how* one can be one: ω -structuralism seems, *prima facie*, to fall victim to a number of vicious regresses. In order to address these, I will bring in some models and tools from homotopy theory, higher-order category theory, and non-wellfounded set theory. My aim is to show that ω -structuralism can be framed as a consistent and coherent thesis, as long as we keep a sufficiently open mind about what kinds of formal structure to allow in our philosophical methodology.

Erik Palmgren

Formalization in typed theories versus untyped theories

Rasmus K. Rendsvig

Dynamics of Informational Cascades

Abstract:

Informational cascades (ICs) may occur in situations where an agent has to choose between a number of alternatives without a strong initial belief about the correctness of either. If earlier choices of others are made available to the agent, she may conjecture that these choices were made on an informed basis, and choose accordingly. An IC occurs when the choosing agent's initial belief are "overridden" by the information extrapolated from the choices of previous actors.

We suggest a model of ICs where the belief revision steps are explicated using dynamic doxastic-epistemic logic and multi-agent plausibility models. A majority-based belief merge operation is used by agents to form beliefs based on social proof, which is used both when agents are making their choice, as well as allow them to reason about the belief construction of previous agents. As a result, all elements of the informal reasoning usually put forth to explain ICs gone through above may be re-produced in a formal setting. We conclude with a few general results regarding these dynamics.

Patrick Blackburn

Formalisation and modal logic

Erik J Olsson

Has Carnap's Methodology of Explication Been Refuted?

Abstract:

The method of explication was introduced by Rudolf Carnap, most systematically in his 1950 book on the logical foundations of probability, as a procedure for defining scientific concepts generally, and philosophical concepts in particular. By the procedure of explication, Carnap explains, "we mean the transformation of an inexact, prescientific concept, the explicandum, into a new exact concept, the explicatum" (1950, p. 3). Thus an explication can be seen as a function or mapping from an informal domain to a formal, exact domain. In his book, Carnap introduces a number of requirements on an explicatum and he provides several explications of scientific confirmation. In the talk, I survey and respond to some criticisms that have been raised against Carnap's methodology, from Strawson's complaint that offering explications for those who seek philosophical illumination is irrelevant and changes the subject to challenges posed by more recent authors. I conclude that these criticisms rely on misunderstandings of the concept of explication, and that Carnap's methodology is alive and well.

Carlo Proietti

Group behaviour and higher-order beliefs. Some issues on formal approaches to social cognition.

Valentin Goranko

Formalizing strategic reasoning

Abstract:

I will present a logical approach to formalization of strategic reasoning in multi-player games, based on concurrent game models and the Alternating time tem-

poral logic ATL. I will then discuss some conceptual issues and challenges arising in the area, related to reasoning with incomplete information, interaction of knowledge and strategic abilities, and the semantics of nested strategic commitments of players.

Sten Lindström

Formalization, informal rigor and mathematical truth

Justine Jacot

Game theory and linguistic interpretation

Paula Quinon

Numerals and numbers. Problems of encodings and denotations.

Abstract:

This talk proposes a study of so called “deviations” which can occur in consequence of accepting this formal definition of the concept of computability that assumes of human intuitions about computation that they concern operations on strings (as captured by Turing’s thesis) rather than abstract knowledge of functions defined on natural numbers (Church’s thesis).

The study involves specification of the relationship between syntactic (numerals) and semantic (numbers) level of the language of number theory, and of denotation functions acting between those two. “Deviations” – resulting in “computability” of some uncomputable functions (halting problem is the most commonly quoted example) – have been claimed to occur on both of those levels ([1], [2], [3]). As well, certain constraints on properties of denotation functions have been proposed ([4]).

The central claim of this talk is that harmful aspect of these “deviations” is avoided thanks to a detailed insight in the distinction on syntactic and semantic strata. Additionally, some remarks on denotation function are formulated. It is claimed that presented results put some light on the creation of the number-concept investigated by cognitive scientists.

References

- [1] Paul Benacerraf, Recantation, or: Any Old ω -Sequence Would Do After All, *Philosophia Mathematica*, vol. 4 (1996), no. 3, pp. 184–189.
- [2] Michael Recorla, Church’s Thesis and the Conceptual Analysis of Computability, *Notre Dame Journal of Formal Logic*, vol. 48 (2007), pp. 253–280.
- [3] B. Jack Copeland, Diane Proudfoot, Deviant Encodings and Turing’s Analysis of Computability, *Studies in History and Philosophy of Sciences*, vol. 41 (2010), no. 3, pp. 247–252.

- [4] Stewart Shapiro, *Acceptable Notation*, *Notre Dame Journal of Formal Logic*, vol. 23 (1982), no. 1, pp. 14–20.

Klaus Frovin Jorgensen

Indexicals within Hybrid Logic