



Seminar

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*A Minimalist Dynamic Cognitive Semantics*

Tuesday, 5 April, 11:15 a.m.

In the Thunberg Lecture Hall  
SCAS, Linneanum, Thunbergsvägen 2, Uppsala  
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#### ABOUT JOHN CANTWELL

John Cantwell studied philosophy and linguistics at Stockholm University. In 2001, he received his Ph.D. from the University of Uppsala for the thesis *Non-Linear Belief Revision: Foundations and Applications*, and did a postdoc at Columbia University, New York. He is associate editor of *Theoria*, and is currently Professor of Philosophy at KTH Royal Institute of Technology in Stockholm.

Cantwell's research has focused on a variety of issues in epistemology, decision theory, logic and the philosophy of language, with particular attention paid to applying formal and mathematical methods in these areas. Among his publications are 'On the Foundations of Pragmatic Arguments', in *The Journal of Philosophy*; 'Two Notions of Epistemic Entrenchment', in *Frontiers of Belief Revision*, H. Rott, M-A. Williams (eds); 'Resolving Conflicting Information', in *Journal of Logic, Language and Information*; and 'The Logic of Dominance Reasoning', in *Journal of Philosophical Logic*. His recent work has focused on conditionals and expressivist interpretations of conditionals as in 'Conditionals in Causal Decision Theory', in *Synthese*; 'First- Order Expressivist Logic', in *Erkenntnis*; 'Unity and Autonomy in Expressivist Logic', in *dialectica*; and 'An Expressivist Bilateral Meaning-is-Use Analysis of Classical Propositional Logic', in *Journal of Logic, Language, and Information*.

During his stay at SCAS, Cantwell will focus on developing a formal semantic framework for global expressivism, applicable to metaethical expressivism and expressivist interpretations of conditionals alike.

#### ABSTRACT

A distinctive feature of language is its *compositionality*: words are combined using various operations into more complex structures that can themselves be combined with these operations allowing for ever more complex structures whose meaning depends on the meaning of its parts. The compositionality of language is one of (very many) features that presents a challenge in trying to explain how we humans can understand and use language. In recent decades cognitive science has made considerable progress in explaining and characterising some of the most important building blocks in our capacity to use language: concept formation and use. As a result we now better understand how concepts are structured (prototypes, frames, etc.), how they acquire their functionality by being tied to the sub-conceptual sensory-motoric system (embodied or grounded cognition), and how they can be combined to form more complex concepts. Less attention has been paid to the problem of how conceptual structures can be combined to form *judgments*, the cognitive capacity or structure that most directly corresponds to the use of full declarative sentences -- as opposed to the sub-units (nouns, verbs, etc.) that make up sentences.

As sentences can themselves be combined and connected in a compositional way they form a substantial part of the problem of compositionality: are there corresponding cognitive structures of ever more complex judgments? If so, don't we face the same problem again as we now need to explain how such complex cognitive structures acquire their functionality? Have we not merely postponed a solution to the problem of compositionality by introducing what in effect is a new language-like compositional structure, but now at the cognitive level: a 'language of thought'?

In this lecture I will present a framework in which the capacity to form simple judgments and the capacity to simulate such judgments form the basic building blocks in an account that leaves no room for composite cognitive structures at the level of judgment. The capacity to understand and use composite sentences is to be explained by the use of dynamic operations on cognitive structures that do not themselves exhibit composite structure. The framework combines Peter Gärdenfors' formal framework of conceptual spaces with the 'file-system' representation of objects that have been championed by cognitive psychologists (and other's). Together with a 'flat' (non-compositional) cognitive structure that capture dependencies between simple judgments, the result is rich enough to represent any theory of first-order logic, indicating that there is no need to invoke composite non-linguistic cognitive structures in or to understand and use composite sentences.