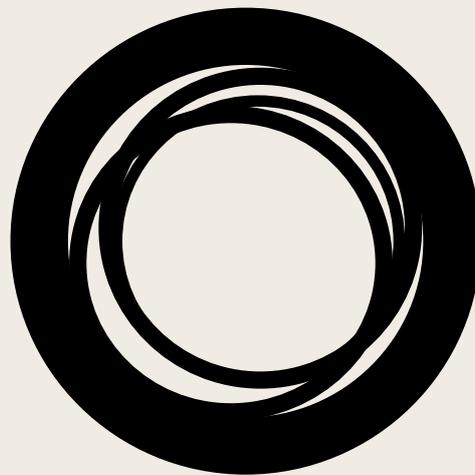


Thursday  
28 February 2013  
7:30 pm  
In English

Any investigation of the relationship between wholes and parts much face the concept of emergence, but that concept has a chequered history in both philosophy and science. The talk will illustrate a pluralistic and pragmatic way to evaluate concepts of emergence, and then evaluate a number of familiar conceptions of emergence. It will focus on weak emergence, which is a hallmark of what we can call “complex wholes”, which are composed of nothing but certain parts organized in certain ways, and their behaviour is nothing but the organized activity of their parts, yet their underlying causal network is highly parallel, nonlinear, and synergistic, so that the behaviour of wholes cannot be derived from the behaviour of isolated parts. Complex wholes evoke terms like “holism”, “surplus”, “synergy”, “situatedness”, and “activity”. Bedau will examine three kinds of complex wholes involving life: (1) a verbal Program-Metabolism-Container model of the origin of minimal chemical life, (2) a precise computational system that exhibits life-like global behaviour, and (3) the wet experiments in bottom-up synthetic biology laboratories that combine nonliving materials to create new and unfamiliar forms of life (or “protocols”).

**Mark A. Bedau** is Professor of Philosophy and Humanities at Reed College, Editor-in-Chief of the scientific journal *Artificial Life*, and regular Visiting Professor in the PhD program in the Foundations and Ethical Implications of the Life Sciences at the European School of Molecular Medicine in Milan, Italy. His interdisciplinary collaborations have recently produced a number of books, including *Emergence* (2008, MIT Press, with Paul Humphreys), *The Nature of Life* (2010, Cambridge University Press, with Carol Cleland), *Protocells: Bridging Nonliving and Living Matter* (2009, MIT Press, with Rasmussen et al.), and *The Ethics of Protocells: Moral and Social Implications of Creating Life in the Laboratory* (2009, MIT Press, with Emily Parke). He is currently writing a book about the emergence and open-ended evolution of life, mind, and technology.



# Mark A. Bedau

## Pluralism

About How Wholes  
Emerge From Parts

### Constituting Wholes

Wholes are said to be more than the sum of their parts. This ‘more’ contains both a promise and a threat. When different elements – disciplines, methods, cultures, individuals – form a whole, they not only join forces, but also generate effects of synergy and a surplus from which also the parts can benefit. Being part of a whole is a way to acquire meaning and to extend oneself beyond one’s limited existence; and having a part in the whole is to have an enlarged agency. But wholes are also more powerful than the sum of their parts. Wholes constitute their parts, determining what is a part and what is apart, what has a part and what is deprived of agency. Becoming a part requires submission and although parts may not pre-exist the whole, there may still be something in the elements that exceeds being a part – even if only the possibility of being part of a different whole. While a desire for being whole or part of a whole seems all-too-natural, organic metaphors, which are often used to think part-whole relationships, have been criticized precisely for naturalizing relations of hierarchy and power. Yet, entirely abandoning the whole in favour of the part(icular) is also problematic. After the disenchantments of the postmodern post-cold-war period and in the face of global crises – be they financial, economic, political, or ecological – the critical need to include a holistic perspective is felt with renewed urgency, as is the concern that the situatedness of any such perspective and the multiple, incommensurable ways of constituting wholes may be forgotten.

The lecture is part of the **ICI Lecture Series Constituting Wholes**, which will explore the double, both active and passive, aspect of “Constituting Wholes” within the framework of the multi-disciplinary ICI Research Focus **Complementarity and Wholes Which Are Not One**.