THE PHILOSOPHY OF BIOLOGY

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ABSTRACTS

Organisms, Brains and their Parts

David Hershenov, University at Buffalo

It is said that the brain is the organ of thought. If the brain produces thought then it would seem to be a thinking being. That means there would be a thinking brain within the larger thinking organism. A sparse ontology is advocated as the most plausible solution.

Paper: http://ontology.buffalo.edu/07/POB/Hershenov.pdf

Outline: http://ontology.buffalo.edu/07/POB/Hershenov_Outline.pdf

The Factory Model of Disease

Neil E. Williams, University at Buffalo, with commentary by Louis J. Goldberg, University at Buffalo

What is the relationship between health and disease and how is it illuminated by the factory model of disease? This presentation suggests a new metaphor for thinking about disease and offers a refurbished analysis of disease through the application of this metaphor.

Slides: http://ontology.buffalo.edu/07/POB/Williams.ppt

Innateness

Michael Levin, City University of New York

It is argued on the basis of a construal of genes as functions from environments to phenotypes that the "folk-biological" notion of innateness can be explicated as ontogenetic fixity. Several recent objections to this explication are considered. The relativity to environment of the expression of genotypes can be recognized by explicit use of a variable for sets of ensembles in the explication.

Handout: http://ontology.buffalo.edu/07/POB/Levin.pdf

Is Race a Scientifically Valuable Biomedical Research Variable?

Robin Andreasen, University of Delaware

Some critics maintain that race lacks scientific value as a research variable on the grounds that the race concept is deeply problematic. I consider, and reject, two versions of this type of objection. I also propose two conceptions of race -- one social, the other phylogenetic -- and briefly examine the role that each might play in biomedical research.

Generative Entrenchment and Evolution: How the Contingent Becomes Necessary

William C. Wimsatt, University of Chicago

Generative Entrenchment or developmental dependency affects the rate of evolutionary change in adaptive structures. This can lead to deeper generative elements becoming frozen in evolutionary time, leading to a kind of dynamical foundationalism, in which initially contingent things become necessary.

Philosophy of Science as a Tool of Biomedical Research

Barry Smith, University at Buffalo

Increasingly, the results of biological experiments are published in two forms: as textual summaries published as the conclusions of journal articles, and as accompanying data published on the web. The latter exists in quantities which make the use of computers indispensable to its analysis. We describe the ways in which the philosophy of scientific experiments is being used as a tool to support such analysis.

Slides: http://ontology.buffalo.edu/07/POB/Smith.ppt

Speciation and Biological Change

Mathias Brochhausen,
Institute for Formal Ontology and Medical Information Science · Universität des Saarlandes, Germany

We use formal ontology as the starting point for a coherent account of taxonomic units and tackling the species problem. The account is focused on speciation as a process universal and its role in phylogeny.

Slides: http://ontology.buffalo.edu/07/POB/Brochhausen.ppt