

## Atelier « Darwinisme & SHS » Lille-Gand

soutenu par l'UMR 8019 Clersé (Université Lille 1) et l'UMR 8163 Savoirs Textes Langage (Universités Lille 1 et 3)

**vendredi 21 juin à Het Pand, Onderbergen 1, Gand**

### PROGRAMME

**14h00-15h00 - Andreas De Block (KU Leuven - université catholique de Louvain)**

*Why psychiatrists shouldn't care about evolutionary psychiatry?*

**15h00-15h30 - Cédric Patin & Gerhard Schaden (université de Lille 3)**

*Linguistics and Darwinism*

**15h30-15h50 - Coffee break**

**15h50-16h20 - Alexis De Tiège (université de Gand)**

*From DNA-centrism to NA-centrism and the conditions for gene-centrism revisited*

**16h20-16h50 - Pierre-Alain Braillard (université de Lille 1)**

*Some reflections on the reasons behind social scientists' resistance against Darwinian approaches*

**16h50-17h00 : short break**

**17h00-17h30: Koen Tanghe (Université de Gand)**

*The non-Mendelian Revolution*

### ABSTRACTS

**Andreas De Block (KU Leuven): *Why psychiatrists shouldn't care about evolutionary psychiatry ?***

Most philosophical critiques of evolutionary psychiatry focus on the explanations that evolutionary psychiatrists have produced to account for the spread and/or persistence of particular mental disorders (Adriaens 2007; Faucher & Blanchette 2011). My critique is more fundamental. I argue that even if the proposed evolutionary explanations for depression, autism, and schizophrenia would be supported by all the available evidence, the value of evolutionary psychiatry for the rest of psychiatry would still be very limited. If true, my argument subverts the claims made by both evolutionary psychiatrists (Nesse 2008, Nesse & Jackson 2006) and philosophical proponents of evolutionary accounts of mental disorders (Murphy & Stich 2000). In their view, evolutionary psychiatry should be the foundation for psychiatric theory and practice. By scrutinizing and rebutting four arguments of Nesse and three arguments of Murphy and Stich in favour of their view, I will show that the assumed added value for psychiatry is either not an added value at all, or that the added value cannot be brought about by evolutionary psychiatry.

References:

- Adriaens, P. (2007). 'Evolutionary psychiatry and the schizophrenia paradox: a critique'. *Biology & Philosophy* 22: 513-528
- Faucher, L. & Blanchette, I. (2011). Fearing new dangers: Phobias and the complexity of human emotions. In P. Adriaens & A. De Block (eds.), *Maladapting Minds: Philosophy, Psychiatry and Evolutionary Theory*. Oxford University Press, pp. 34-64.
- Murphy, D. & Stich, S. (2000). Darwin in the Madhouse: Evolutionary Psychology and the Classification of Mental Disorders. In P. Carruthers & A. Chamberlain (eds.), *Evolution and the Human Mind: Modularity, Language and Meta-Cognition*. Cambridge: Cambridge University Press, pp. 62-92.
- Nesse, R. . (2008). Evolution in medical education: The most basic science is missing. *Lancet*, 372, 21-27.
- Nesse, R. & Jackson, E. (2006). Evolution: Psychiatric nosology's missing biological foundation. *Clinical Neuropsychiatry* 3: 121-131.

**Cédric Patin (Lille): *Linguistics and Darwinism***

Languages change through time, just like organisms do. Both linguists and biologists have long been aware of this fact; Darwin himself explicitly insisted on the similarity in "The Descent of Man".

In our talk, we will investigate in detail the parallels in the evolution between these two domains, by reviewing arguments put forward for or against an Darwinian approach in linguistics. Although in the 19th century evolutionary

thought in linguistics was quite common, 20th century linguistics has been dominated by a systemic vision of language - studied at a given moment, without consideration to its development -, which turned the mainstream of the field away from preoccupations with language history.

In the late 20th century however, the case of language change as a specific facet of cultural evolution has revived interest in the study of language change.

In our talk, we will try to investigate the motivation for a Darwinian, evolution-based approach to language. We will notably investigate

- a) in which sense languages are made of replicators, and what these replicators are;
- b) which kinds of variation selection can work on;
- c) which kind of heredity is at stake in languages;
- d) how the Darwinian "Descent with Modification" can be made sense of; and
- e) what kind of selection linguistic entities could undergo, and who might be the agent of the process of selection.

We will also discuss in which ways linguists have turned to evolutionary biology in the Darwinian tradition as an inspiration or an analogous domain in order to describe (or to formally model) language change, and of potential pitfalls in this strategy.

### **Alexis De Tiège (UGent): *From DNA-centrism to NA-centrism and the conditions for gene-centrism revisited***

First the 'Weismann barrier' and later on Francis Crick's 'central dogma' of molecular biology nourished the gene-centric paradigm of life, i.e. the conception of the gene/genome as a 'central source' from which hereditary specificity unidirectionally 'flows' or 'radiates' into cellular biochemistry and development. Today, due to advances in molecular genetics and epigenetics such as the discovery of complex post-genomic and epigenetic processes in which genes are causally integrated, many theorists argue that a gene-centric conception of the organism has become problematic. Here, we first explore the causal implications of the following two, to the central dogma related issues: (i) widespread reverse transcription – arguing for a shift from 'DNA-genome' to RNA-encompassing 'NA-genome', and thus from traditional DNA-centrism to a broader 'NA-centrism'; and (ii) the absence of a mechanism of reverse translation – arguing for the 'structural primacy' of NA over protein in cellular biochemistry. Secondly, we explore whether this latter conclusion can be extended to a 'functional primacy' of NA over protein in cellular biochemistry, which would imply a limited kind of 'gene/NA-centrism' confined to the subcellular level of NA/protein-based biochemistry. Finally, we explore the conditions – and their (non)fulfilment – for a more generalized form of gene-centrism extendable to higher levels of biological organization. We conclude that the higher we go in the biological hierarchy, the more dubious gene-centric claims become.

### **Pierre-Alain Brilliard (Lille 1): *Some reflections on the reasons behind social scientists' resistance against Darwinian approaches***

The aim of this talk is to contribute to a general analysis of the opposition (or lack of interest) of the majority of social scientists towards the application of the Darwinian framework to their objects of study (cultures, societies, behaviour, mind, etc.). I assume that both intellectually good and bad reasons can be found and I will try to give a broad and rough typology of these various arguments, which can be historical, methodological, or philosophical.

If we want a good understanding of these tensions, I think we need to look carefully at the difficulties that impede a convergence, articulation and possible integration of these different approaches. As it is common in the history of science, oppositions between fields partly come from a lack of readiness for a genuine dialogue. To a certain extent we see this problem in the encounter of evolutionary biology and the social sciences. Tendencies to disciplinary imperialism, lack of pluralism, ignorance and caricature of other approaches (of their methods, data, models and theories) can be found on both sides. This is an old problem, but it is still partly responsible for the recurring conflicts in these domains.

### **Koen Tanghe (UGent): *The non-Mendelian Revolution***

In 1989, Peter J. Bowler called the Mendelian revolution a revolution of major conceptual proportions. It was one which, he said, might ultimately even have to be regarded as at least as important a transformation in our ideas about life as 'the Darwinian debate', even though its effects are not as immediately visible as those of that debate. The genetic revolution has, indeed, like other major scientific revolutions, been accompanied by an important paradigm shift. The main reason why, in sharp contrast to those other revolutions, it is still not identified with that profound change in our thinking, is simple: the full effects of the genetic paradigm shift indeed only became clearly visible long after it started in the 19<sup>th</sup> century. The new, gene-centric interpretation of life was, to be precise, explicated and, to a certain extent, elaborated in 1976, in the second most popular science book of the 20<sup>th</sup> century: *The Selfish*

*Gene*. It revolves around the simple but profound and radical idea that somas are mere survival machines of genes. This paper not only charts the gene-centric paradigm shift, but also explains why the new interpretation of life was only explicated in 1976. Last but not least, it argues that a reinterpretation of the history of genetics in terms of this paradigm shift is heuristically interesting in that it sheds new and clarifying light on a large number of historical and contemporary issues, ranging from Gregor Mendel's experiments and their 'rediscovery' in 1900, Lamarckism, Darwin's theory of evolution and the nature/nurture debate, to the discovery of DNA, the emotion revolution and the selfish gene theory itself. Some long-debated, profound questions will never be resolved, as long as we don't learn to think about the genetic revolution in terms of the gene-centric paradigm shift that made it possible.