

**International workshop.**  
**« Biological identity after the postgenomic turn »**

*Labex Who I Am.*

**Tuesday November 12, 2024**

IHPST, 13 rue du Four 75006 Paris  
2ème étage

**Programme**

10h

Introduction. (Cécilia Bognon-Kuss)

10h15-11h30

Johannes Martens, CNRS, Sorbonne Université  
*Biological identity: (why) should we care?*

11.30-12.45

Laura Nuno de la Rosa, Complutense University of Madrid  
*The reproduction of identity*

12.45-14.30

Lunch

14.30-15.45

Tim Lewens, University of Cambridge  
*Who am I? Who could I have been? And who are my parents? The mitochondrial perspective.*

15.45-17

Sébastien Ibanez, Laboratoire d'Ecologie Alpine, Université Savoie Mont Blanc  
*The identity of ecosystems: an evolutionary approach*

17-17.30

General discussion and concluding remarks

*Contact.* Cecilia.bognon@gmail.com

## Abstracts

### « Biological identity: (why) should we care? »

**Johannes Martens, CNRS, Sorbonne Université**

There are two different questions that one may ask with respect to the very notion of biological identity—a notion that is itself inseparable (though distinct) from the related concept of biological individuality. The first concerns the *diachronic* aspect of this notion, and has to do with the conditions of persistence of biological individuals (a typical formulation is: under which circumstances can we say that  $x$  at some time is the same biological individual as  $y$  at another time?). The second, by contrast, concerns the *synchronic* dimension of this notion, namely the grounds that we have for distinguishing between different biological individuals at a given time (put roughly, this question amounts to the problem of determining the *number* of biological individuals which exist at a given time in a given place). From a logical perspective, these two questions are clearly not independent, since an answer to the former presupposes an answer to the latter. But their respective significances, as I will argue, differ drastically when one envisages them from the viewpoint of the biological sciences. Thus, the diachronic question—albeit frequently addressed in the philosophy of biology literature—turns out to be of little scientific value to biologists, whereas the synchronic question raises subtle philosophical issues when it comes to assessing the validity of some biological ontologies, especially those which presuppose the existence of multiple and *overlapping* classes of biological individuals (e.g. Darwinian, physiological, ecological, etc.). These issues, though mostly metaphysical in character, have important implications concerning the *form* that a biological ontology might take, and should therefore be taken seriously by anyone interested in the very nature of biological individuality.

### « The reproduction of identity »

**Laura Nuño de la Rosa, Department of Logic and Theoretical Philosophy,  
Complutense University of Madrid.**

[lauranun@ucm.es](mailto:lauranun@ucm.es)

The reproduction of biological identity is becoming an emerging focus in the philosophy of biology. From the neo-Darwinian perspective, reproduction has traditionally been understood in terms of the replication of genetic information, with variations in identity arising from random changes during this copying process. In recent decades, however, this identification of reproduction with replication has been challenged on several grounds. Developmental approaches have shown that genetic identity alone cannot fully explain the identity of morphological and physiological traits, necessitating an understanding of developmental mechanisms. Additionally, niche construction and extended inheritance theories have argued that non-genetic factors, such as epigenetic modifications and engineered environments, must also be transmitted across generations to reproduce phenotypic identity. In this talk, I will focus on an emerging challenge to the replicator framework that examines how reproductive systems actively engage in reproducing both general and specific aspects of biological identity. As a case study, I will explore eutherian pregnancy, particularly how mechanisms of maternal selection—including gamete and oocyte selection—participate in recognizing identity relationships between parents and offspring, and how the regulation of developmental relations, from implantation to birth, serve as criteria for individual identity.

**« Who am I? Who could I have been? And who are my parents? The mitochondrial perspective. »**

**Tim Lewens, University of Cambridge**

It is nearly 10 years since the legalisation in the UK of so-called ‘mitochondrial replacement therapy’ (MRT). This family of technologies has also been widely referred to as ‘three-parent IVF’. Both labels—‘MRT’ and ‘Three-parent IVF’—have attracted criticism. The first has been dismissed by philosophers on the grounds that at least some, possibly all, of the technologies in question are not therapeutic: it is said that they change which person comes to exist, instead of changing the health state of an individual. The second label has been dismissed by scientists on the grounds that the mitochondrial ‘donor’ is not truly a parent. This talk uses both of these accusations to help map out a suitable approach to identity and parenthood. Because both questions have significance for policy, the answers given to both should draw on an attitude of philosophical precaution.

## « The identity of ecosystems: an evolutionary approach »

**Sébastien Ibanez, Laboratoire d'Ecologie Alpine, Université Savoie Mont Blanc**

Ecosystems are one of the biological objects whose identity is particularly loose, both in space and time. Moreover, the different fields in ecology do not converge towards a unique definition of ecosystems, and therefore do not delimit the same objects. This might not be an issue, since ecological objects might have a purely heuristic value. It is tempting, however, to look for natural ecosystemic objects, whose identity should be discovered rather than postulated. Since evolutionary theory has been instrumental for the identification of many biological objects, this might also be the case for ecosystems. However, the kind of objects referred by ecologists as ecosystems are so loose that they can hardly be subject to evolution by natural selection. A more restricted approach is therefore suggested, where only some ecosystemic *properties* evolve, not entire ecosystems. These properties may form intricated clusters, which can serve as an evolutionary basis of ecosystemic identity.