

**GRADUATE WORKSHOP ON PHILOSOPHY OF SCIENCE / SEMINARIO DE  
INVESTIGACIÓN EN FILOSOFÍA DE LA CIENCIA**

**VIERNES 9 DE MARZO – 9:00 - 13:30**

**SALA DE JUNTAS. FACULTAD DE EDUCACIÓN, FILOSOFÍA Y ANTROPOLOGÍA (EHU-UPV)**

**Alejandra Martínez Quintero (EHU-UPV)**

**Giorgio Airoidi (UNED)**

**Guglielmo Militello (EHU-UPV)**

**Emilio Cáceres Vázquez (UNED)**

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Departamento  
Lógica,  
Historia y  
Filosofía de  
la Ciencia

# Graduate Workshop on Philosophy of Science

9/03/2018

9:00 – 13:30

**Sala de Juntas - Batzar Aretoa** – Facultad HEFA - Educación, Filosofía y Antropología  
UNIVERSIDAD DEL PAÍS VASCO – EUSKAL HERRIKO UNIBERTSITATEA  
Avenida de Tolosa 70 - 20018, Donostia - San Sebastián

## PROGRAM

**9:00-9:30 Alba Amilburu (EHU-UPV, IAS-Research) & Cristian Saborido (UNED). Opening.**

**9:30-10:15 Emilio Cáceres (UNED): *¿Realmente mató la bacteria al coronel? Perspectiva sistémica, causación internivélica e intervalos de cuasi-descomponibilidad en las explicaciones mecanísticas.***

Resumen:

Tras un análisis crítico del enfoque mecanicista de explicación científica y propondré complementar esta perspectiva con una concepción de nivel como intervalo de cuasi-descomponibilidad que nos permite fundamentar metafísicamente las propuestas mecanicistas clásicas en las propiedades sistémicas características de las entidades que se trata de explicar. Terminaré con el desarrollo del concepto de mecanosistema y con un ejemplo biológico concreto con el que demostraré cómo mi propuesta permite superar algunas de las limitaciones de los enfoques predominantes de explicación mecanística.

**10:15-11:00 Guglielmo Militello (EHU-UPV, IAS-Research): *Functional Integration in the Endosymbiotic Origin of Mitochondria.***

Abstract:

Functional integration is broadly defined in life sciences as the causal interdependence among the subsystems forming an organism. However, this characterisation is vague and not able to describe the different degrees of functional integration in living beings. From an organizational perspective, functional integration is interpreted as the mutual dependence of the constitutive constraints that collectively maintain the whole organisation. This talk aims to investigate how the endosymbiotic relationship between the proto-mitochondrion and a proto-eukaryotic cell led to a functional redefinition of both biological organisms which contributed significantly to a more integrated biological organization. The functional redefinition of bioenergetic systems will be examined, because it seems to have played a pivotal role in the emergence of a more functionally integrated organization of the eukaryotic cell. It will be argued that the concept of

'functional integration' is intimately connected with those of 'biological novelty' and 'biological individuality'.

**11:00-11:30. Coffee break**

**11:30-12:15 Giorgio Airoidi (UNED): *El concepto de fitness como el 'Caballo de Troya' del adaptationismo contra las propuestas no-adaptacionista de explicaciones evolutivas.***

Resumen:

La síntesis moderna se fundamenta en la transformación, por parte de Fisher, de la idea cualitativa darwinista de 'fit' (el encaje entre organismo y entorno) en 'fitness' (eficacia reproductiva), una variable escalar que permite medir y formalizar las relaciones entre selección y rasgos. Gracias a los éxitos del neo-darwinismo, la fitness se ha convertido en la médula de todo modelo de cambio evolutivo. Sin embargo, creemos que, si se siguen analizando las explicaciones no-adaptacionistas en base a sus efectos en la fitness, que es un concepto adaptacionista por definición, nunca se podrá mostrar el impacto que tienen en la creación del orden biológico.

**12:15-13:00 Alejandra Martínez Quintero (EHU-UPV, IAS-Research): *The menstrual bodies: Indications for an enactive approach to research.***

Abstract:

Since the 1930s neuroendocrinology has investigated the interactions between steroid hormones, emotions and human behavior across menstrual cycle. This research line in cognitive science has contributed to establish theories of sexual dimorphic task to justify cognitive inferiority (Sainy, 2017). Nevertheless, recent observational studies (Leeners et al, 2017) and methodological reviews (Sundström Poromaa and Gingnell 2014) have found no associations between female hormone levels and the prefrontal cortex functions across the menstrual cycle. The principal claim is that false-positive findings are common in this kind of studies. However, we find this discussion as an important hint to address a more general problem about the relation between female hormone levels, menstrual cycle and cognition. Neuroendocrinological studies reduce menstrual cycle only to a hormonal variable. Thus cognitive differences seems to depend only to hormonal variations. This work suggests on one hand that the menstrual cycle has to be taken seriously as an epistemic object in its own right in order to understand female differences as a whole bodily process. On the other hand, from an enactive approach, is also necessary to bring the body into the front to look at cognition in the full scope of a sense-maker. Thus neuroendocrine studies can be enriched with embodied explanations to complete the characterization of menstrual bodies for further explanations of relevant cognitive differences.

**13:00-13:30 Conclusion and farewell**

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