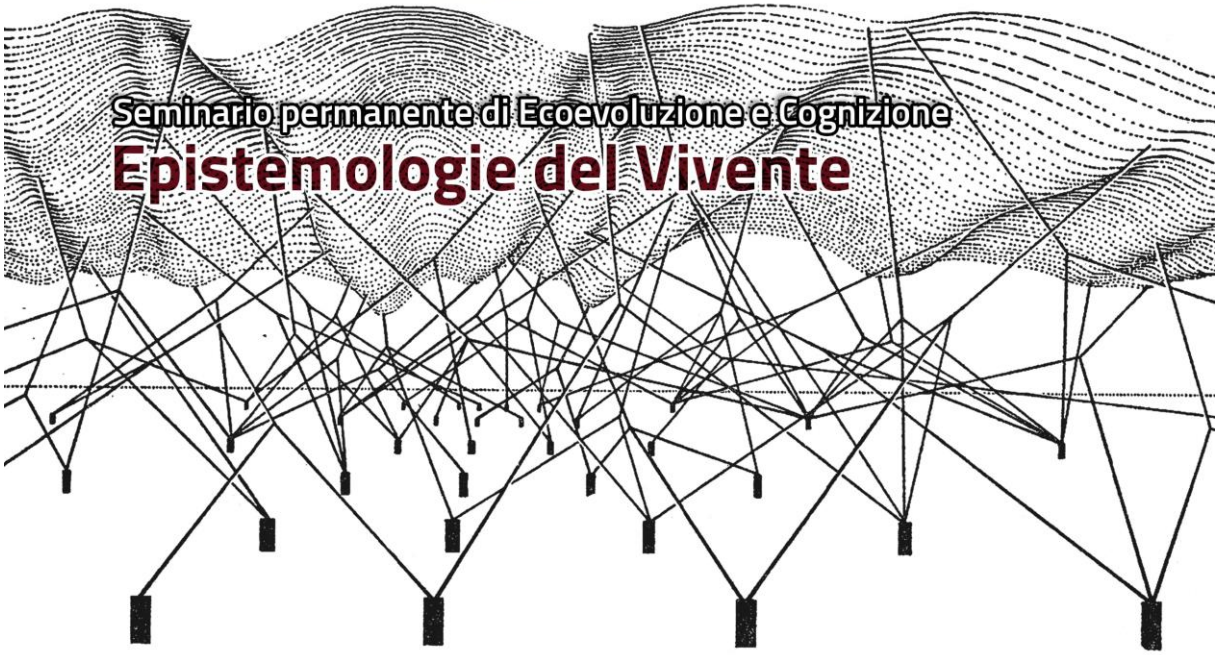
SAPIENZA
UNIVERSITÀ DI ROMA

ECOVEG
SEMINARIO PERMANENTE ECOEVOLUZIONE E COGNIZIONE

res viva

DIPARTIMENTO DI FILOSOFIA
DOTTORATO IN FILOSOFIA



Seminario permanente di Ecoevoluzione e Cognizione

Epistemologie del Vivente

Canalization and genetic assimilation

Rethinking Waddington's legacy

Laurent Loison
(CNRS - IHPST, Parigi)

Responsabile scientifico: ***prof.ssa Elena Gagliasso***

18 MERCOLEDÌ
OTTOBRE 2017

Dipartimento di Filosofia
Villa Mirafiori – Aula X

ore 14:30

facebook.com/ecoevocog
ecoevocog@gmail.com

realizzazione grafica a cura di: molinarigrafica.it

Canalization and genetic assimilation: rethinking the Waddingtonian concept of the inheritance of acquired characters

Laurent Loison
CNRS (IHPST, UMR 8590)
France

Abstract

Since the late 1990s and the birth of the Extended Synthesis debate, the term "genetic assimilation" has been the object of increasing popularity. Despite this renewed interest, it remains hard to precisely define what genetic assimilation is: this concept is often conflated with the so-called "Baldwin effect" and/or integrated in the over-inclusive framework of "genetic accommodation". The aim of this presentation is to emphasize the specificity of the mechanism of genetic assimilation elaborated by Conrad Waddington during the 1940s and 1950s.

Firstly, I will show that the Baldwin effect and genetic assimilation are two distinct mechanisms that explain the same Lamarckian phenomenology. Secondly, when genetic assimilation is not conflated with the Baldwin effect, its standard explanation relies on the idea of an inductive threshold of a phenocopy. I will contrast this interpretation with the one favored by Waddington. In the original Waddingtonian framework, canalization and the modelling of epigenetic landscapes are the key concepts to explain how and why genetic assimilation can occur. I will attempt to clarify the causal relationships between canalization and genetic assimilation. These causal relationships allowed Waddington to develop an original understanding of the old concept of the inheritance of acquired characters. In the last part of my talk, I will show that this concept, while certainly not Lamarckian, constitutes a genuine challenge to the classical Modern Synthesis.