A bibliometric enquiry about the Modern Synthesis (1947-2010): results and questions

Jean Gayon*[1]

[1]Institut d'Histoire et de Philosophie des Sciences et des Techniques (IHPST) – Université Paris I - Panthéon-Sorbonne, CNRS : UMR8590, Ecole Normale Supérieure de Paris - ENS Paris, université Paris -Panthéon Sorbonne – 13 Rue du four 75006 PARIS, France

Abstract

On the Expansion of the Modern Synthesis ca. 1960-1979, Session I (Gayon, Beatty, Suárez-Diáz)
The paper presents the main conclusions of an extensive bibliometric study of journals focused on evolution. From 1947 (date of creation of *Evolution*) to 2010 (> 60 journals explicitly devoted to evolution), the inquiry shows that:

1. The rate of creation of new journals was approximately constant until 1970, after which it declined until 2000, when it increased dramatically.

2. In all, 22 journals have an explicit disciplinary orientation corresponding to the three main fields typical involved in the original Synthesis: Genetics, Systematics, and Palaeontology, whereas 23 focus on other disciplines. In order of first introduction, these are biochemistry (2), anthropology (6), ecology (9), development (3), molecular biology (8), bioinformatics (2), and applied evolution (1). Except for biochemistry, all journals in this second group were created after 1970.

3. An enquiry into the frequency of certain words in titles and key words shows that the references to Darwin is huge and increased continuously from 1947 to 2010, whereas such terms as "Darwinism", "Neo-Darwinism", and "Modern Synthesis", is rare (esp. those related to "synthesis"). Here also, the years 1970-80 show a reversal of tendency.
These data suggest that 1970 was a turning point with respect to two aspects of the Synthesis as defined in the 1940s – the doctrinal aspect (evolution as dominated by mutation and selection) and the disciplinary aspect. The paper discusses the risk of bias involved in this kind of study and proposes ways to reduce that risk. It also suggests how improved tools could bring this bibliometric inquiry closer to more traditional approaches to the history of evolutionary theory and doctrines.

*Speaker