Once upon a Time: Construction and Realism of K-T Mass Extinction Data

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Abstract

"Session: Perspectives on Extinction (Julien Delord, David Sepkoski, Marco Tamborini, Derek Turner)." David Jablonski (1996) argues that two basic problems lie at the base of the mass-extinction debate: a) Limitation on fine temporal scale; b) The scarcity of simple cause-effect relation. My talk aims to sketch out the degrees of construction of the paleontological data involved in the study of Cretaceous-Tertiary mass extinction, thus posing a philosophical reflection upon this event. I will start by problematizing Cleland's asymmetry of causation and time (Cleland 2001, 2002, 2011). If on the one hand the research of (non) smoking guns seems to fit into the actual praxis of the historical reconstruction (Keller 2005), on the other the asymmetry of time can be overcome, i.e. stabilized, only by modelling a working version of the past. Models are indeed able to describe the effects of extinctions. They are a narration of diversity through time, extremely important to understand the history of biodiversity through deep time. Nevertheless, they lack a precise dimension of time, exactly as every narration does. On the contrary, biostratigraphical correlation provides a finer chronology. This finer scale, however, is based upon insufficiently elaborated data. It therefore generates an asymmetry of time and the great expectation syndrome (Ager 1993; Tsujita 2001). I will conclude my talk by arguing that paleontology should primarily concentrate on the description of selective patterns, since it is the only way to overcome the problem of local underdetermination.

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