

THE LAZARUS METAPHOR IN PALAEOLOGY AND THE SCIENTIFIC VALUE OF THIS AND OTHER METAPHORS

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The Lazarus effect in Palaeontology means an outage of the fossil record of a taxon or an evolutionary lineage, especially after mass extinctions. It is based on the biblical story (John 11:1–45) in which Jesus brought Lazarus back to life. The Lazarus metaphor (Lazarus effect or phenomenon) is also used in other sciences e.g., in physics, biology, medicine, and also in arts. However, a google search revealed that most references in natural sciences are in palaeontological context. The Lazarus metaphor is somewhat crooked because the biblical story is meant unironic: Lazarus was really dead for four days and was awakened by Jesus. However, the extinction of an evolutionary lineage is irreversible. Thus from the beginning, the Lazarus metaphor meant only an apparent temporary extinction. The outage of a taxon reflects decreased population sizes, survival in refugia, an incomplete sedimentary record or other possible causes. Analysis of a database of Triassic gastropod species revealed that the lower the standing species diversity is, the greater is the number of Lazarus genera indicating that both reflect the same underlying reasons. The Lazarus metaphor is known to most palaeobiologists. Its use is justified because it elegantly circumscribes the cumbersome phenomenon of an incomplete fossil record. Fancy metaphors were coined or used for phenomena connected with major mass extinctions, especially with the end-Permian one: Elvis-taxa, Dead clade walking, and Lilliput effect. Research on great mass extinctions is one of the most important palaeontological contributions to earth and life sciences. Therefore, it attracts most ambitious scientists who want to produce high-impact research and coin the wording to enhance the impact even more. However, caution is needed when introducing and using such metaphors. They may detract from the solution of scientific problems and compromise the seriousness of our work.