

Philosophy of Biological Systematics: a short course

**NATURAL
HISTORY
MUSEUM**
LOS ANGELES COUNTY

Natural History Museum of Los Angeles County

29 July – 2 August 2019
9 am – 5 pm

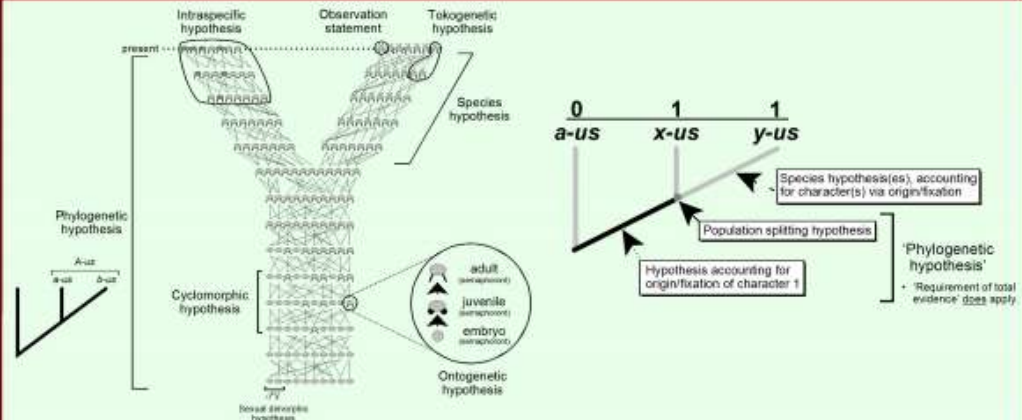
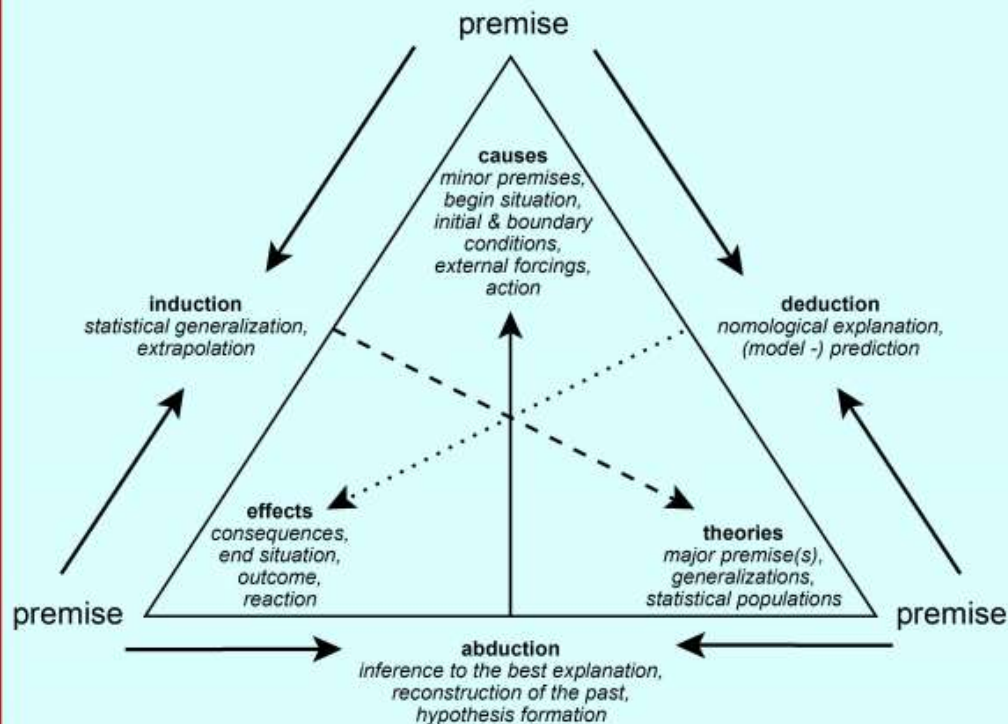
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“All the ideas of science come to it by the way of Abduction. Abduction consists in studying facts and devising a [hypothesis] to explain them. Its only justification is that if we are ever to understand things at all, it must be in that way.”



**Charles Sanders Peirce
(1839-1914)**



What is Likelihood?

$$L(h_i | e, b) = P(e | h_i, b)$$

Likelihood is a relation between hypothesis and potential test evidence, e

Deductive inference X:

- auxiliary theories/hypotheses
- theory, T ,
- phylogenetic hypothesis, h_i ← $L(h_i | e, b)$
- shared characters, o
- predicted test evidence, e ← $P(e | h_i, b)$