

# **Formalizing syntactic theories model-theoretically: what it involves, and why it is a good idea**

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There are two very different kinds of mathematics that can be applied to the formalization of syntactic theories. One originates in work on the mathematization of logical proof nearly a hundred years ago, and led to the development of generative grammar in the 1950s. It has dominated almost all thinking about syntactic theory in the last 60 years. The other stems from model theory, which was not developed until the 1950s and not applied to structural description until after 1960. It has had very limited application in linguistics. It underlies work on Johnson & Postal's arc pair grammar and some work on HPSG. I outline both approaches in a relatively informal way, and then argue that the model-theoretic approach is far better suited to the description of human languages than the generative one, and survey some of the reasons. Among the relevant topics are the gradience of ungrammaticality, the fact that nonsentences and fragments have linguistic properties, and the independence of syntactic principles from the contents of the lexicon.