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Sebastien Vasey* (sebv@math.harvard.edu). *Non-elementary classification theory.*

The classification theory of elementary classes was started by Michael Morley in the early sixties, when he proved that a countable first-order theory with a single model in some uncountable cardinal has a single model in all uncountable cardinals. The proof of this result, now called Morley's categoricity theorem, led to the development of forking, a joint generalization of linear independence in vector spaces and algebraic independence in fields, which is now a central pillar of modern model theory.

Lately, it has become apparent that forking also exists in several non-elementary contexts. Prime among those is the axiomatic framework of abstract elementary classes (AECs), encompassing the class of models of any $\mathbb{L}_{\infty,\omega}$ -theory and closely connected to the more general accessible categories. A test question to judge progress in this direction is the forty year old eventual categoricity conjecture of Shelah, which says that a version of Morley's categoricity theorem should hold of any AEC. I will survey recent developments, including the connections with category theory and large cardinals, as well as my resolution of the eventual categoricity conjecture for classes of models axiomatized by a universal $\mathbb{L}_{\infty,\omega}$ -theory. (Received September 25, 2017)