

The first-mover advantage in scientific publication

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Since the 1970s scientists have considered mathematical models of the citation process in an attempt to explain the extraordinarily wide variation observed in the number of citations a paper receives. An underappreciated corollary of these models is the prediction of a strong "first-mover" effect whereby the first papers in a field will, essentially regardless of content, receive citations at a rate enormously higher than papers published later. Tests of this prediction against data from a selection of fields reveal in many cases a first-mover effect of a magnitude similar to that predicted by the theory. The cynical might say that the scientist who wants to become famous is better off -- by a wide margin -- writing a modest paper in next year's hottest field than an outstanding paper in this year's. Similar effects are also seen in other areas, including popular music. Based on these results we propose some improved ways of assessing which papers are most important.