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Title:	How Realistic Knowledge Diffusion Models Should Be?
Abstract:	Knowledge diffusion models typically involve two main features: an underlying social network topology on one side, and a particular design of interaction rules driving knowledge transmission on the other side. Acknowledging the need for realistic topologies and adoption behaviors backed by empirical measurements, it becomes unclear how accurately existing models render real-world phenomena: if indeed both topology and transmission mechanisms have a key impact on these phenomena, to which extent does the use of more or less stylized assumptions affect modeling results? In order to evaluate various classical topologies and mechanisms, we push the comparison to more empirical benchmarks: real-world network structures and empirically measured mechanisms. Special attention is paid to appraising the discrepancy between diffusion phenomena (i) on real network topologies vs. various kinds of scale-free networks, and (ii) using empirically measured transmission mechanisms, compared with canonical appropriate models such as threshold models. We find very sensible differences between the more realistic settings and their traditional stylized counterparts. On the whole, our point is thus also epistemological by insisting that models should extensively be tested against simulation-based empirical benchmarks.
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