The Hazards and Benefits of Condescension in Social Learning

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In a misspecified social learning setting, agents are condescending if they perceive their peers as having private information that is of lower quality than it is in reality. Applying this to a standard sequential model, we show that outcomes improve when agents are mildly condescending. In contrast, too much condescension leads to worse outcomes, as does anti-condescension.

In our misspecified setting agents perfectly understand and interpret their own signal but misperceive the quality of their predecessors' signals. When agents are mildly condescending, efficient learning occurs. Because agents underestimate the quality of others' signals, they put too little weight on their predecessors' actions. In consequence, their actions are suboptimal, but reveal more of their own private information. When this is done in moderation more is gained than lost, and in the long run the result is quick convergence to the correct action. This occurs even with signal distributions that would have induced inefficient learning for well-specified agents. Of course, since agents are misspecified, each agent attains lower expected utility than they would if they were not, ceteris paribus. Nevertheless, their behavior has positive externalities on later agents, with improved asymptotic outcomes.

When agents are too condescending they put so little weight on their predecessors' actions that no herd forms and both actions are taken infinitely often, i.e., asymptotic learning is not obtained. When agents are anti-condescending they put too much weight on their predecessors' actions. In consequence wrong herds form with positive probability, and again asymptotic learning is not obtained. Interestingly, it follows that asymptotic learning is equivalent to efficient learning across all misspecified regimes.

A full version of this paper can be found at https://arxiv.org/abs/2301.11237.

CCS Concepts: • **Theory of computation** → *Social networks*; *Convergence and learning in games*.

Additional Key Words and Phrases: Social Learning, Misspecified Learning, Speed of Learning