

Mathematical Modeling of the Evolution of Trust

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Abstract

Trust is an integral part of our society, and in theory, every person should exhibit pure altruism; however, this is not the case, and this deviation from what would be most beneficial must have a cause. In order to examine this evolution of trust, a mathematical model can be used to explain patterns seen in society. Trust has previously been modeled mathematically using agent based modeling, in which agents have certain parameters and trust strategies, or tendencies to trust or not to trust. The goal of these models is to determine the dominant trust strategy under different conditions; previous models have fixed the number of interactions between agents, and the results of the model vary widely depending on this number. This project hopes to provide a more realistic look at the evolution of trust in society by randomizing the number of interactions between agents and determining what the dominant trust strategy is under these conditions. The model will be created using NetLogo, and will be made more accessible to the casual viewer by allowing them to adjust the parameters and explore the evolution of trust on their own.