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Modeling Paradigm Shifts in Cultural Evolution

Cultural transmission is a process of innovation and interaction between individuals that brings about changes in societies. These changes can occur either smoothly and gradually or suddenly and abruptly. Abrupt changes are collective phenomena referred to as 'paradigm shifts'. The goal of this work is to present a simple mathematical model of cultural paradigm shifts. Using population dynamics and mechanisms of cultural transmission, we explore how the interaction between cultural elements changes the dynamics of cultural transmission to the extent that it can explain the occurrence of paradigm shifts.