



Figure 6: Comparison of state snapshots of typical runs for variation of the altruism threshold q .

5 CONCLUSION & FUTURE WORK

To determine cooperation in multiagent systems with cultural traits, this work explored trait propagation and its interaction with cooperation. In contrast to only empirical work (Hales, 2001; Klemm et al., 2005), our analytical approach showed that in a MAS with cultural traits: 1. It is possible that distinctive traits will spread completely over a population and converge to a specific traits setting. 2. Under certain conditions, a propagation can stagnate. Through empirical experiments we have found that the basic disposition for altruistic behaviour of course has a major influence on the propagation of traits and thus in second place positively affects the cooperation and vice versa. Above all, these results confirm the claim by (Klemm et al., 2005) that there is a threshold, which divides between polarisation and globalisation. If the willingness to cooperate, and thereby confidence and sympathy are generally high, the cultural traits spread quickly over the whole population and evoke more confidence and sympathy. In the case of very selfish agents who are unwilling to cooperate, the existence of more successful agents in the neighbourhood leads to a only local cultural trait propagation and thereby to more cooperation within this cluster.

In future work agents can to a minor degree randomly replace cultural traits through completely dif-

ferent ones (mutation) and will be able to get to know new agents and abandon existing contacts (mobility). Furthermore, agents will possess various abilities, so that jobs, which require various abilities, can be solved only by distinctive cooperation partners (see (Eberling, 2009; Edmonds et al., 2009)). Additional work in this field could contribute to explain the accomplishment of cooperation in networks with many individuals and many different cultural traits.

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