

Modelling the effects of gossips

Guillaume Deffuant

Laboratoire d'Ingénierie pour les Systèmes Complexes) LISC, Irstea, France.

We rapidly review the main models of gossips which generally focus on their utility: detecting cheaters, providing information about potential partners, enforcing social norms. Then we consider a simple model suggesting that gossips could also have an intrinsically negative impact on group cohesion. In this model, each agent holds an opinion about herself and the others. During random encounters by pairs, agents modify their opinions under the noisy influence of others. The influence is attractive and agent's opinions are more strongly attracted by the opinions of whom they value higher than themselves and vice versa. We focus on two unexpected emerging patterns: Starting from zero, when agents talk only about themselves and about their direct interlocutor, agents' opinions tend to grow and their average then stabilises at a significantly positive value. When introducing gossips, i.e. when the agents also talk about other agents that they know, this pattern tends to be inverted; the opinions tend to decrease and stabilise on average at a negative value. We show that these patterns are related to the competition between a positive bias for the self-opinion of agents and a negative bias for the opinion about others. The gossips increase the negative bias on the opinions about others and it can overcome the positive bias on self-opinions, which otherwise dominates.