# Dynamics of Opinions about One-self and Others

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We consider a model of $N$ agents, each characterized by an opinion about itself and all the others, represented by a real number between $-1$ (very bad opinion) and $+1$ (very good opinion). The agents meet by randomly chosen pairs and influence each others opinions through two processes: (i) vanity: agents increase their opinion of agents that value them highly and decrease their opinion of agents and undervalue them (ii) gossiping: agents propagate their opinions about other agents they know, in particular about themselves and about the agent they are talking with. The model includes two main additional hypotheses: (i) agents have a noisy access to the others opinions, with a uniform symmetric noise (ii) agents adopt more easily the opinions of the agents that they highly value. We study more particularly the case where the vanity process dominates over the opinion propagation. In this case, the opinions converge to a pattern in which each agent has a small set of friends (agents which are valued close to $+1$) and all the others are enemies (agents which are valued close to $-1$). The network of friends tends to show the characteristics of a small world. Moreover, all the agents have a positive opinion of themselves. We unfold the interaction processes leading to this pattern, particularly the asymmetry between friends and enemies. We finally discuss rapidly a different pattern showing cycles where the agents lose all their friends and their positive self-opinion and then manage make friends again and restore their positive self-opinion.