

Abstract Submitted
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Competing effects of social balance and influence¹ P. SINGH, S. SREENIVASAN, B. SZYMANSKI, G. KORNISS, RPI — The theory of social balance is one of the key drivers of social dynamics. We study a model of social interactions in which the dynamics of social balance is competing with external influence. In this model, each node in a social network is in one of the three possible states - leftist, rightist, centrist. Only a link between two unequal extremist nodes is considered unfriendly and a triangle is balanced if it contains even number of unfriendly links. Thus triangles formed by a centrist, a leftist and a rightist are unbalanced. In this model, at each time step with probability p , we pick a random node and convert it into a centrist while with probability $(1-p)$, a randomly picked triangle is checked for balance and if needed, it is balanced by updating the state of one of the nodes in the triangle. We find that there exists a critical value p_c such that for $p < p_c$ the system exhibits two fixed points in addition to the pure consensus point of all centrists. One of these is a metastable fixed point around which the system may get trapped for a long time, while the other is an unstable fixed point separating the metastable fixed point from the consensus point.

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