

Detecting Concurrent Personal Mood in Social Networks from Contact Diaries

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Academia Sinica

Abstract

This paper examines how people express personal mood concurrently with those connected with them by one or two degrees of separation, using data from contact diaries that 133 participants kept online for seven months in 2014, which included 127,455 contacts with 12,070 persons. In addition to recording their own mood and the strength of ties with those whom they had contact during the period, diary keepers also rated a contacted person's mood during each specific contact, as well as the strength of ties between any pairs of such contacted persons. Because some diary keepers contacted one another during the period, furthermore, their own ratings help us cross-check the mood and tie strength evaluated by both parties. Such rich information about ties and contacts enable us to construct a complete contact network for each diary keeper, along with the network members' mood and tie strength. We first calculate one's overall mood by that person's average mood score during the study period and then take the shortest path between any given pair of contacted persons as the degree of separation. Using mixed-effects models while controlling for covariates at both tie and contact levels, we show that personal mood varies significantly by the average mood among those directly tied to the person. The same effect remains positive and significant, though the effect size is reduced by about one half, for those connected to the person by two degrees. The mood of anyone separated by more than two degrees is statistically irrelevant.

This is a joint work with Ta-Chien Chan, Tso-Jung Yen, Tsuey-Hwa Hu and Yang-chih Fu.