

“The effects of individual traits on the formation of social networks among first-year college students”

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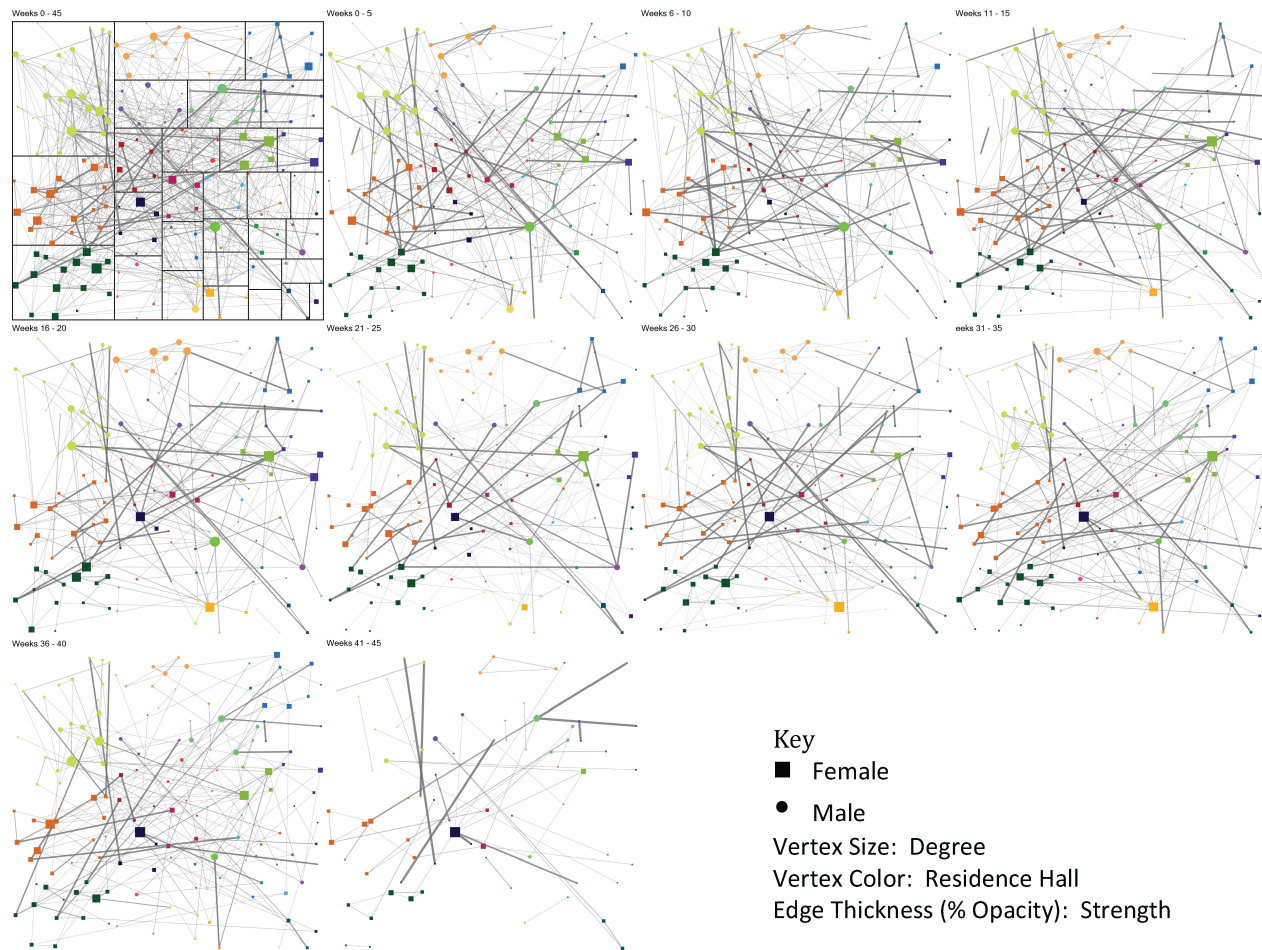
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Preference: Regular Talk

To date the predominant model in the social sciences for understanding the relationship between networks and human behavior has been the “pipes and flows” model. This model assumes that network ties are relatively unchanging and therefore serve as conduits through which things--objects, information and behavioral influence--flow. The dynamic revolution in network science however calls into question this assumption. In social networks, edges are constantly being formed, dissolved and re-negotiated in relatively narrow time-windows. This dynamic perspective on networks opens up the possibility that persons, within environmental and structural constraints, have effects on network relations (e.g. enacting them, neglecting them, choosing to keep them or dissolving them). Processes of agency, (self) selection and dynamic change that were under-theorized in past research on social networks are now being modeled and their implications for understanding behavior explored.

This paper advances this research effort by analyzing unique data on ~200 entering college students who did not have any ties among themselves prior to arriving on campus in 2011. Through phone log information about whom they communicated with obtained from their use of smartphones that they were given, we are able to map the evolution of their social networks over time. At various points in time we can compute measures of the characteristics of the networks they have formed since arriving on campus, such as their in and out degree, clustering coefficient, overall activity level, and various network compositional measures (e.g., proportion of women their network). In this paper we then formulate and estimate statistical models that can account for the variability in the individual network outcomes as a function of a person’s traits (personality, attitudes, demographic, aspirations) and behaviors (affiliations, extracurricular activities) prior to arriving on campus and the traits of their social (high school) and family networks prior to arrival (derived from a survey given to them prior to arrival). Preliminary results indicate that men and students with low extraversion scores have smaller networks, as do people who are maintaining a large network acquired during high school. The paper goes on to analyze whether these network deficits persist over time or whether the network “gap” closes and those with fewer ties catch up.



Evolution of a Social Network Among ~200 College Students Across Nine 5-Week Time Periods