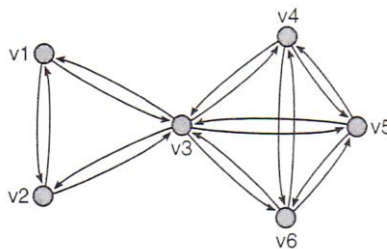


Assignment 3 – Bridges and Brokerage

In the case of public behavior, that is, the behavior that cannot be concealed from people on other groups, it has been argued that membership in several different cliques is very stressful because it obliges a person to conform to the (supposedly different) sets of norms of different cliques. In this position, a person has very little room to maneuver and therefore is constrained. In particular instances, this hypothesis (the hypothesis of overlapping cliques) contradicts the structural hole argument that suggests if a person is a member in several different cliques, there are structure holes between cliques, which may be exploited. In the network depicted in the following figure, for example, vertex v3 may exploit structural holes between the members in the 3-clique (v1 and v2) and the other members in the 4-clique (v4, v5, and v6). According to the structural hole hypothesis, vertex v3 is least constrained. According to the hypothesis of overlapping cliques, however, v3 is most constrained because it is a member in two cliques.



Having two competing hypotheses, it's interesting to see which one applies in a particular situation. The case is a small hi-tech computer firm that sells, installs, and maintains computer systems. The data file **Hi-tech.net** contains the friendship ties among employees, which were gathered by means of the question: Who do you consider to be a personal friend? Three employees (Fran, Quincy, and York) did not return the questionnaire. Note that most friendship nominations are reciprocated, but not all (112 of 147).

Some months later after the friendship network data were collected, there was a campaign to unionize the firm. The three top managers (*class 3* in the partition **Hi-techUnionClass.csv**) and three employees who were not directly involved (*class 2*) were opposed to union certification of the firm. Five employees (*class 1*) were pro-union, but two of them (Chris and Ovid) did not actively advocate the pro-union position. At the end, the proposal to unionize the firm was voted down. Chris resigned from the firm ten days before the vote because he didn't want to participate in it. He rejoined the firm two days after the vote.

Analyze these data and argue whether they support the structural hole argument or the hypothesis of overlapping cliques. You need to find out cliques of the friendship network. You need to use at least one measure of brokerage. Pay attention to the position and behavior of Chris in particular. In addition, you may analyze the brokerage roles if the groups are defined by the stance toward unionization (**Hi-techUnionClass.csv**) and find out whether this explains Chris's behavior.

This assignment is from Exploratory Social Network Analysis with Pajek by Wouter de Nooy, Andrej Mrvar, Vladimir Batagelj.