Assignment 2 – Subgroups

In 1948, American sociologists executed a large field study in the Turrialba region, which is a rural area in Costa Rica (Latin America). They were interested in the impact of formal and informal social systems on social change. Among other things, they investigated visiting relations between families living in a neighborhood called Attiro. The network of visiting ties is a simple directed graph: each arc represents "frequent visits" from one family to another. The exact number of visits was not recorded. Line values classify the visiting relation as ordinary (value one), visits among kin (value two), and visits among ritual kin, i.e., between god-parent and god-child.

The investigators proposed an ethnographic classification of the families into six family-friendship groupings on substantive criteria. In rural areas where there is little opportunity to move up and down the social ladder social groups are usually based on family relations.

We would like to reconstruct the way the families were assigned to family-friendship groupings. You may use different community detection methods (at least try Girvan-Newman algorithm in iGraph and the modularity community detection algorithm in Gelphi) to find communities in the family visiting network. Compare these methods and discuss which methods find groups that best match the family-friendship groupings. Do you think researchers used additional information to assign families to the groupings?

You can **download the dataset** from the course website session week 3:
Attiro.net: The network of visiting ties. 60 vertices (families), 161 arcs (visiting relations), line values (1 - ordinary visits, 2 - visits among kin, 3 - visits among ritual kin).
Attiro_grouping.csv: ethnographic classification into six family-friendship groupings (class numbers 1 to 6).

You can also download a file from the course website session week 3 that includes **useful iGraph commands**: Useful commands for community detection in R.txt

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