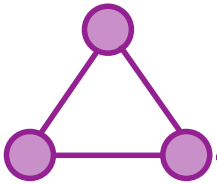
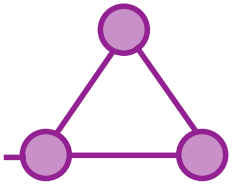


The Strength of Weak Ties



Paper by Mark S. Granovetter

Discussion chaired by Jorge Aranda

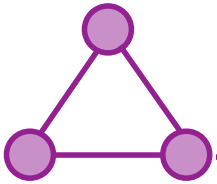
These slides are from U Toronto course "CSC 2231: Online Social Networking Systems"
http://www.cs.toronto.edu/syslab/courses/csc2231/07au/
and discuss
Strength of Weak Ties, M. S. Granovetter. *The American Journal of Sociology* 1973.

Background

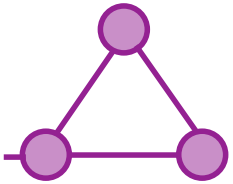
- Macro-level sociology
  - Class struggle and capital
  - Social mobility
- Micro-level sociology
  - Interpersonal relations
  - Social psychology
- Problem: No bridges between macro- and micro-level behaviour

Background (cont.)

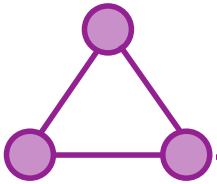
- Sociometry
  - Ego-centric network studies
    - (very popular in classroom research)
- Milgram and the "small world" phenomenon
- Rogers and the "diffusion of innovation"



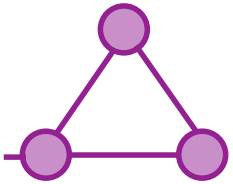
Goals of the paper



- Granovetter tries to achieve two goals:
  - First, show that "the analysis of processes in interpersonal networks provides the most fruitful micro-macro bridge"
  - Second, illustrate the cohesive power of "weak ties", and the benefits of studying them along with the "strong ties" popular in most network studies
- Both are important for us, for different reasons



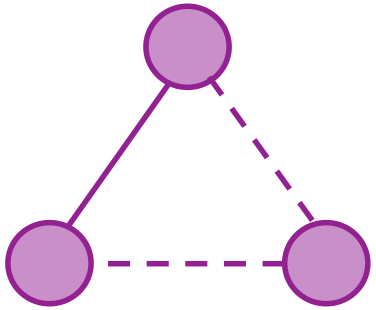
Basic argument



- Classify interpersonal relations as “strong”, “weak”, or “absent”
  - Strength is (vaguely) defined as “a (probably linear) combination of…
    - the amount of time,
    - the emotional intensity,
    - the intimacy (mutual confiding),
    - and the reciprocal services which characterize the tie
  - Negative and/or asymmetric ties (e.g. enemies or relations with power imbalance) are brushed aside for now

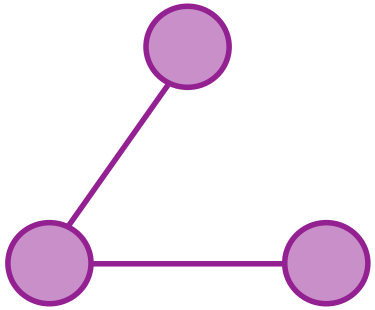
Basic argument (cont.)

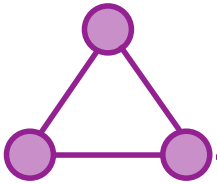
- The stronger the tie between two individuals, the larger the proportion of people to which they are *both* tied (weakly or strongly)
  - In the extreme case, two people that are *always* together will be tied to the same individuals



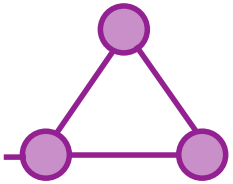
Forbidden triad

- If person A has a **strong** tie to both B and C, then it is unlikely for B and C not to share a tie.
  - Granovetter (admittedly) exaggerates and supposes such a triad *never* occurs



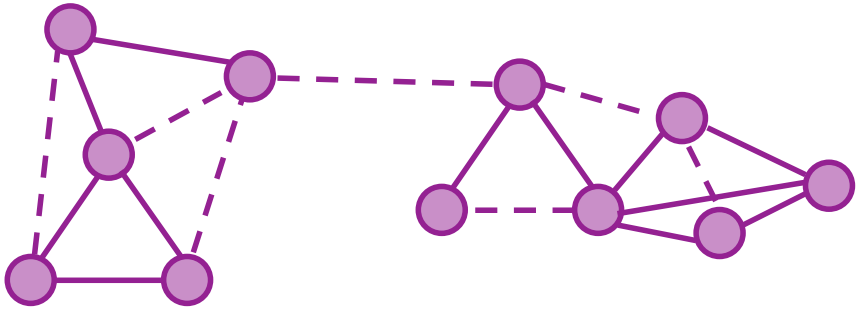


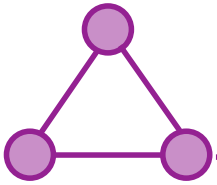
Bridges



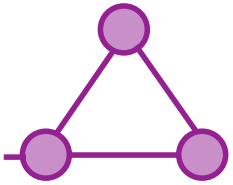
- A bridge is "a line in a network which provides the *only* path between two points"

- Therefore, if the previous triad is in fact absent, *no strong tie is a bridge*
  - In other words, *all bridges are weak ties!*
  - (realistically, bridges can be *local* rather than *global*, but still weak)





Strength of weak ties



- "Intuitively speaking, this means that whatever is to be diffused can reach a larger number of people, and traverse greater social distance (i.e., path length), when passed through weak ties rather than strong."

- Consequences
  - Diffusion of information (rumours, innovations, getting a job!)
    - Homophily
  - Group cohesion and trust
  - Traversal of networks and node coverage

Questions

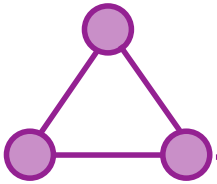
- Problems with “strength”…
  - Is “strength” of ties properly defined?
  - Can it be measured?
  - Does it make sense to classify ties in the “strong”, “weak”, and “absent” categories?
  - Is the omission of negative and asymmetric ties a major problem?

Questions (cont.)

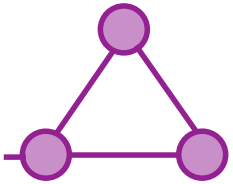
- The forbidden triad
  - Is the assumption that the "forbidden triad" almost never occurs valid?

- Getting a job, spreading a rumour, finding innovations…
  - Perhaps we get these from weak ties simply because we have more of them?

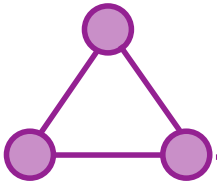
- Does Granovetter's argument hold despite these questions?



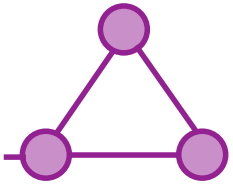
Applications



- What is in it for **Online** Social Networks?
- "Weak ties are strong" is a valuable insight for…
  - Information diffusion
  - Threat edges
  - Network crawling
  - …
- But the micro-macro level bridge has deeper consequences
  - We take it for granted now, but it's a key assumption behind several of the papers we've read recently



Reactions to the paper



- Hailed as one of the most influential Social Networks papers
  - Generated abundant research in practically every field it discussed
    - Especially in social mobility (getting jobs)
  - Also generated the perverse kind of "networking" job searchers are encouraged to use these days

- Social capital and "structural holes"
  - Social capital – the kind of capital we have because of who we know
  - Structural holes – the person acting as a bridge can reap significant benefits from the network "holes" around her

Reactions (cont.)

- On measurements, see “Measuring Tie Strength”, Marsden & Campbell 1984.
  - A measure of ‘closeness’ or intensity is the best indicator of tie strength
  - Strength predictors (blood ties, neighbours) fare poorly, as do duration and frequency of contact
  - “Time spent” is not bad as a strength construct