

Chapter 3

The Strength of Weak Ties

How do people find out about jobs? Are relatives, close friends, acquaintances, employment agencies, or newspaper advertisements the most useful sources about jobs? Mark Granovetter, a sociology graduate student, tried to answer this question in his Ph.D research. He interviewed about 100 and sent questionnaires to about 200 people in the Boston area who had changed jobs or recently been employed. All of these were what he called "professional, technical, or managerial" workers; they were not blue collar workers.

Granovetter was interested in how his respondents found out about their current jobs. Economists like to assume that buyers and sellers in the marketplace, including the marketplace for labor, have "perfect information." This means that all workers know about all the job possibilities for which they are qualified. Such a model might be not too unreasonable if most workers found their jobs through advertisements or through employment agencies. However, Granovetter found that more than half found out about the job opening that lead to their current employment through personal contacts; they knew someone who knew about the job opening. Specifically, 56% found their current job

through personnel contacts, only 19% through advertisements or employment agencies, and 19% through direct application to the firm that hired them (the remaining 7% used other methods or did not answer the question).

Thus, not surprisingly, the model used by economists is misleading. The information people possess about job possibilities is affected by their placement within networks. Let me give you a few examples from Granovetter's book:

Edward A., during high school, went to a party given by a girl he knew. There, he met her older sister's boy friend, who was ten years older than himself. Three years later, when he had just gotten out of the service, he ran into him at a local hangout. In conversation, the boy friend mentioned to Mr. A that his company had an opening for a draftsman; Mr. A applied for the job and was hired.

Norman G's daughter was in nursery school, where she met the daughter of a lawyer who consequently became friendly with him. When Mr. G. quit his job, the lawyer told him of an opening in the accounting area of a firm which was one of his clients. He applied, and was hired.

We could diagram these cases.

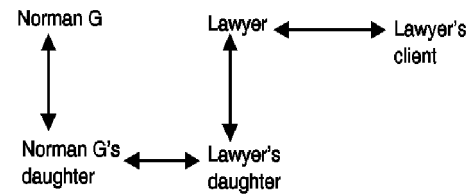


Figure 1

Note how indirect this knowledge is. Granovetter found that many of the paths between the job and the new employee were surprisingly indirect. And not only were the paths surprisingly long. In addition, the person who told them about the job was often someone they did not know very well. Edward found out about the job from his sister's old boy friend, Norman from another parent in his child's nursery school. Granovetter tried to assess the strength of the relationships between the job seeker and the person who informed him of the job using simple "objective" questions that he could use in interviews and questionnaires. The questions he asked were simply how often his job-seekers saw the person who told them about their new jobs and whether the person was a friend, a relative, or a business contact. Using these questions, Granovetter distinguished between "strong" and "weak" ties. Strong ties exist when people see each other frequently over long periods of time. The

relationship is close and intimate. Weak ties are the opposite; weakly tied individuals see one another infrequently and their relationships are casual rather than intimate.

Granovetter had good reasons for expecting that strong ties would be more useful than weak ties. Those with whom one has strong ties have one's interests at heart. They will give the job seeker whatever valuable information they have. They might also be expected to exert whatever influence they have on behalf of the job seeker. Moreover, the greater frequency of contact means that they have more opportunities to advise the job seeker and have better information about his interests and skills.

Despite all these good reasons why job seekers might be expected to get more and better information from those with whom they had strong ties, the opposite was actually the case. Job seekers almost always found out about the new jobs from people they saw occasionally (less than once a week but at least once a year) or rarely (less than once a year). They also did not find out about their new jobs from friends or relatives (only 31% did). In addition, the jobs that were found through weak ties were on the average better than the jobs found through strong ties; they were better paying and the workers were more satisfied).

Granovetter did not have adequate information to definitely pinpoint why weak ties were more valuable. He did, however, offer an insightful conjecture, one that has proven to be

valuable for others studying the diffusion of information in networks. A person's close friends and relatives are likely to move in his own social circles are likely to know one another. Therefore, the information they provide is likely to be redundant; what he hears from one friend he is likely to have heard from others as well because they talk to one another and they are themselves exposed to the same sources of information.

On the other hand, one's acquaintances are likely to come from different social circles. They are likely to be different from the job seeker himself and different from each other. Therefore, they are exposed to different sources of information. Each of them will tell the job seeker things he has not heard from other acquaintances or friends.

One's good friends, relatives, and others one sees frequently are likely to have relations with each other, but this is not true of ones acquaintances. We could diagram this as follows:

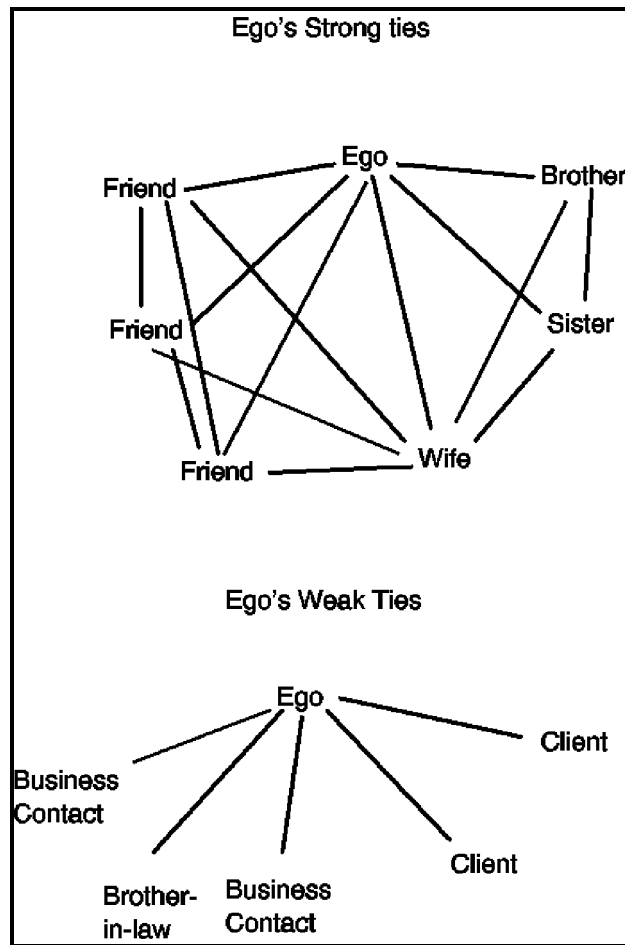


Figure 2

The people in ego's strong-ties network tend to be tied to one another. The people in Ego's weak-ties network may not even know one another. Another way of expressing this is that strong ties tend to be transitive, or are at least more transitive than

weak ties, but that the intransitivity of the "weak" ties is the very source of their strength in terms of finding a job. One's weak ties all live in different worlds, and therefore each

supply one with unique information unavailable from other sources.

To examine

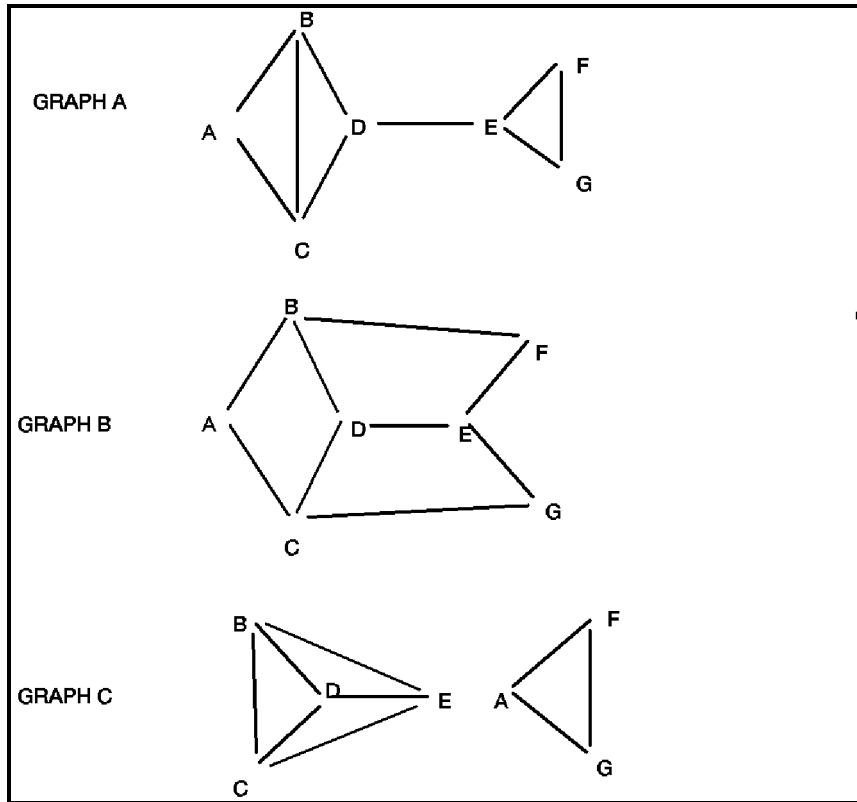


Figure 3

this idea further, examine the following networks.

These three graphs have a lot in common. Each consists of seven vertices (people). In each A, F, and G have two ties while B, C, D, and E have three. However, they differ in their degree of transitivity. Remember that transitivity is defined as follows:

Definition: A relation R is *transitive* if whenever aRb and bRc , then it is also true that aRc .

Graph C represents a completely transitive relation, as one can see by checking out all the possibilities.

aRb	bRc	$aRc?$
A-F	F-G	yes
A-G	G-F	yes

B-C	C-D	yes
B-C	C-E	yes
B-D	D-C	yes
B-D	D-C	yes
B-E	E-D	yes
B-E	E-C	yes
C-B	B-D	yes
C-B	B-E	yes
C-D	D-B	yes
C-D	D-E	yes
C-E	E-B	yes
C-E	E-D	yes
D-B	B-C	yes
D-B	B-E	yes
D-C	C-B	yes
D-C	C-E	yes
D-E	E-B	yes
D-E	E-C	yes
E-B	B-C	yes
E-B	B-D	yes
E-C	C-B	yes
E-C	C-D	yes
E-D	D-B	yes
E-D	D-C	yes

All of the pairs of relations in the first two columns exist. The first two relations in each row together plus transitivity imply that a third relation should exist, and it

always does. Therefore, the relationship is transitive.

On the other hand, a similar tabulation for Graph B shows that the assumption of transitivity is violated in every instance.

aRb	bRc	aRc?
A-B	B-F	no
A-B	B-D	no
A-C	C-D	no
A-C	C-G	no
B-A	A-C	no
B-D	D-C	no
B-D	D-E	no
B-F	F-E	no
C-A	A-B	no
C-D	D-B	no
C-D	D-E	no
D-B	B-A	no
D-B	B-F	no
D-C	C-A	no
D-C	C-G	no
D-E	E-F	no
D-E	E-G	no
E-D	D-B	no
E-D	D-C	no
E-F	F-B	no
E-G	G-B	no
F-B	B-A	no

F-B	B-D	no
F-E	E-D	no
F-E	E-G	no
G-C	C-A	no
G-C	C-D	no
G-E	E-D	no
G-E	E-F	no

Graph B is never transitive, when the conditions are met. On the other hand, Graph A is between the other two. Although the graph is not transitive (because the definition is not met), there are instances of transitivity as well as intransitivity.

Now, the important point is that information about a job (or about anything else will diffuse more widely and more quickly in a less transitive graph. First, let me define the distance between two vertices in a graph.

Definition: The *distance* $d(x,y)$ between two vertices in a graph is defined as the length of the shortest path between them. If there is no path between two points x and y , then $d(x,y) = \infty$ (infinity).

We saw that these points are *unreachable* from each other.

The distance between two vertices in a graph should be related to how quickly information flows through a network. The closer two vertices, the fewer the number of intermediary people who must be informed before information flows from one to the

other. In the completely intransitive graph B, the greatest distance between any pair of points is three. That means that at most two mediating people separate any two people in the graph. In the more transitive graph, the greatest distance is 4; some pairs are separated by three people. Finally, in the completely transitive graph, some pairs are unconnected; information from some people will never reach others. For example, any job information possessed by B will never reach A in graph C.

HOMEWORK

1. For Graph A, form a table assessing transitivity similar to the tables shown in the text for graphs B and C.
 - a. What proportion of the rows of your table show transitivity?
 - c. The deletion of one edge and the addition of another edge in Graph A would produce transitivity. What edges are they?
2. Discuss whether or not the following is true. If a relation is transitive and if there is a path of any length connecting person A with person B, then there must also be a direct path from A to B. Does this help explain why information received from strong ties is likely to be redundant?