# BUILDING SOCIAL NETWORKS*

KATHERINE GIUFFRE
*The Colorado College*

PAMELA PAXTON
*University of North Carolina at Chapel Hill*

AS NETWORK THEORY and methodology have improved, so have empirical applications. One area of research involves the examination of social structure constraining some actors while enhancing the opportunities of others (Burt 1992; Sewell 1992; Wellman 1992). Instructors should expose students to this new and interesting area of research. Much of the reading is complex, however, and difficult to illustrate in a lecture. In this paper, we propose an exercise that allows students to build a physical network of ties and then experience, firsthand, how it can influence opportunities.

In the exercise, students are divided into two groups and given different constraints on their ability to form networks of personal ties. Specifically, the class builds a social network among its members, using string to represent ties between actors.[1] In building ties, the students follow a set of rules that differ depending on their group membership (privileged group or unprivileged group). Once they create their networks, the instructor distributes a valuable good to students and their access to this good depends on the ties that they have made to others. The differing constraints on the two groups guarantee that the "privileged" students will always have more access to the valuable good. Students can then examine the results of these differences in opportunity and discuss the analogies between the constraints of the exercise and real-life constraints.

The basic exercise can be used in a variety of substantive contexts. In this paper, we focus on job opportunities. This is a logical topic since the process of finding a job is often a process of using personal networks to one's advantage. Additionally, some groups of people in our society are consistently more employed and better employed than other groups (Granovetter 1974).

Network analysis provides a unique approach for showing students how people are matched to jobs. Using networks permits students to understand the structural constraints on opportunity. That is, rather than relying on bias theories (employers are racist/sexist), or deficiency theories (the unemployed are unemployable due to their own deficiencies), or a culture of poverty, network analysis allows students to see the limits on opportunity that depend purely on social structure. Furthermore, network analysis allows students to break down the traditional categorical attributes of race, sex, and class in interesting ways. Why are some groups, such as women and minorities, perpetually unsuccessful in the job market? One answer may lie in the way those groups are able to build networks.

We begin by explaining the exercise in the context of inequality in job opportunities. The following section provides background information on job opportunities, illustrates

*The authors are listed in alphabetical order to indicate an equal contribution to this paper. Direct correspondence to either Katherine Giuffre, The Colorado College, Department of Sociology, Colorado Springs, CO 80903; e-mail: kgiuffre@cc.colorado.edu or Pamela Paxton, University of North Carolina, Department of Sociology, CB#3210, Chapel Hill, NC 27599-3210; e-mail: ppaxton@gibbs.oit.unc.edu We thank Elisa Bienenstock and anonymous *Teaching Sociology* reviewers for helpful comments on an earlier draft of this paper. We are responsible for any errors.

[1]Sociograms, or pictures of social networks with lines representing ties between individuals, are an essential part of the social networks literature. Diagrams are often used to help illustrate complex ideas in clear and concise ways (e.g., Breiger 1974; Burt 1992; Wasserman and Faust 1994). In this exercise, students create a "living sociogram." Readers interested in the history of sociograms or in ways to present networks in the classroom should consider Klovdahl (1981).

the basic machinations for creating a network of ties in the classroom, explains the process of distributing the valuable good, and provides questions for leading the discussion. Then, to illustrate the flexibility of the exercise, we describe briefly two other potential applications. Our conclusion offers solutions to a few possible problems and reviews the pedagogical utility of the exercise.

## APPLICATION ONE: INEQUALITY IN JOB OPPORTUNITIES

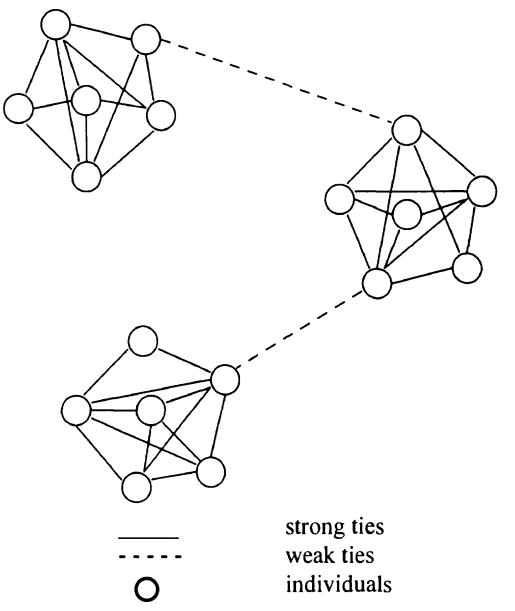
In this section, we describe the network exercise as it applies to a specific application: finding a job. The two groups in this application are "majority" (the privileged group) and "minority" (the unprivileged group).

### *Background Information*

The key background source for this application is Granovetter's book, *Getting a Job* (1974). He found that over half of all successful job seekers among Professional, Technical, and Managerial (PTM) workers used personal connections to find their positions. Of those using connections as compared to those using other methods of finding a job (e.g., advertisements, head hunters, direct application), connection users were better paid, more satisfied with their situation, and rated more highly by their employers than users of other job search strategies.

The importance of networks in getting a job is tied to the notion of information transfer, as described in Granovetter's "The Strength of Weak Ties" (1973) or in Travers and Milgram's "Small World" studies (1969). These studies argue for a conception of the social structure in which people are embedded in dense cliques of overlapping ties and a small number of weak ties connect these cliques (see Figure 1). The close-knit nature of some cliques (women, people of color, rural dwellers, and the poor) is much greater, and therefore more constricting in terms of acquiring information such as job openings, compared to other, less dense groups (men, whites, urban dwellers, and the affluent). A network diagram such as the one shown in Figure 1 can help students visualize one conception of social structure of the United States.[2] We suggest that students read about inequality in job opportunities before the day of the exercise (e.g., Granovetter 1973, 1974) and that instructors give a brief lecture on this topic before facilitating the exercise. Once students have a basic understanding of the role that social networks play in gaining information, the exercise may begin.

**Figure 1. Weak Tie Links Between Dense Cliques**




### *Building the Network*

In the first half of the exercise, the students build a network of string. To begin, the instructor gives each student an envelope that contains an instruction sheet, a card designating membership in the majority or minority group (these cards may be color-coded for ease in identification), a safety pin or paper clip to affix these cards to their clothing, and string that will be used to represent each student's ties to the others.

[2]This picture is also useful for explaining related concepts surrounding subcultural norms.

The majority and minority groups contain an equal number of students so that the effects of numbers are negated and the effect of social structure alone remains.

The exercise hinges on the fact that *majority and minority students differ in both their materials and their instructions*. Majority students have more string (3 versus 2 pieces), their pieces of string are longer, and they may move about the room while minority students must remain stationary. Table 1 outlines the different materials for each group, while the appendix provides a sample instruction sheet (tailored to the "finding a job" example), which describes the differing rules for the two groups.

After all students have an envelope, the instructor should allow some time for them to read the instruction sheet before explaining the rules of the exercise. The instructor should then announce that each student is either a member of the majority group or a member of the minority group and that the two groups follow different rules of conduct. All students should attach their identification card to their clothing in a visible place. It is important to stress at this time (and throughout the exercise) that there are an equal number of minority students and majority students.

The instructor should choose one student from the class to demonstrate the proper procedure for tie building. The instructor holds a sample bundle of string by the knot and gives the unknotted end of one of the strings to the student. The instructor can note that since she or he and the student are already tied together, the student does not have to give one end of his or her string to the instructor—that would create a redundant link since two strings would link them instead of just one. The instructor should also stress two other strategies. First, since students will be using their ties to acquire a valuable good, they should be mindful of making *advantageous* connections to others. Second, since majority students may move around the room, but minority students may not move, majority students should be wary of tying themselves down by becoming connected to immobile, minority students.[3]

Once the instructor demonstrates the correct way to form a tie, emphasizes the importance of making ties with advantageous others, and reiterates the rules for the two groups, she or he should give the students approximately 15 minutes to form their network connections. Be sure to enforce the rules during this time, so that minority students are not moving from their places.

### *Executing the Exercise*

At the end of the 15-minute period, minority and majority students are spread out across the room, connected by the strings they are holding. At that time, have everyone who is standing sit down wherever they are and face the front of the classroom. From the

[3]In fact, majority students, according to rule two, should not accept string from minority students if it will restrict their movement. In turn, minority students may not force anyone to take their string. These rules are intended to reflect power differentials between groups and the fact that individuals may "rationally" determine whether a tie is advantageous for obtaining valuable goods. In practice, students who have built individual loyalties with each other during the course tend to ignore or override the rule. This will not make a difference to the outcome of the exercise.

**Table 1. Contents of the Envelopes and Rules for Each Group**

| Group: | Majority | Minority |
|---|---|---|
| Supplies in the envelope: | 1. Three pieces of string, 3 to 5 feet long, tied together at one end.<br>2. Color-coded card with "majority" designation and pin for affixing to clothing.<br>3. Instruction sheet. | 1. Two pieces of string, 1 to 2 feet long, tied together at one end.<br>2. Color-coded card with "minority" designation and pin for affixing to clothing.<br>3. Instruction sheet. |

instructor's vantage point at the front of the room, she or he should sketch briefly the geography of the room with regard to density of ties and types of actors (minority enclaves, mixed neighborhoods, isolates, etc.). The color-coded cards that students are wearing will aid in this task.

Take an object (such as an eraser) and announce that it represents a job and the person holding the object provides the job. Anyone directly connected (by a string) to the person giving out the job is eligible for the job. At this point, the instructor may wish to remind students of Granovetter's findings about the usefulness of connections. Give the job to a student and have everyone who is directly tied to that student stand up. This is the first "trial," where a trial is the act of giving the job (eraser) to a particular student. Count the number of majority and minority students who are eligible for the job and record that information on the board.

Table 2 illustrates a sample record of a number of trials (filled in with fictitious information). The first line of Table 2 shows that the first job was given out by a minority student residing in a mixed neighborhood. One majority student was attached (and so available for the job) while two minority students were attached to the minority student with the eraser.

The instructor should conduct a number of trials and should pick a different student to distribute the job during each trial. We suggest six trials, including the following situations: a majority and a minority student in a mixed neighborhood, a majority job-giver in a majority enclave, and a minority job-giver in a minority enclave. The final two trials may be of the students' choosing—perhaps the areas of most dense and least dense ties. It is best if a total of three majority and three minority students are chosen to hold the eraser. After completing six trials, the students should return to their seats and put their materials back into the envelopes while discussion of the results proceeds.

The instructor should then add the total number of minority and majority applicants for the jobs. There will be a greater number of majority students who are eligible for the jobs. Point out again that an equal number of majority and minority students exist in the room. The instructor may also highlight that when a majority member is the source for the job, more people are eligible for it. That is, majority involvement elicits more economic action.

***Discussion and Interpretation of the Results***

The rules of the exercise provide majority students with greater access to information and opportunity, even though equal numbers of majority and minority students exist. The structural features of the situation, rather than the individual categorical attributes of the actors, determine the outcome, although these two characteristics intersect. In a discussion of the exercise, the challenge for students lies in: (1) recognizing this aforementioned fact and (2) relating the rules of the game to information about the real world. The following three points provide students with topics and questions that con-

**Table 2. Example Record for Inequality in Job Opportunities**

| Trial | Source of Job | # Majority | # Minority | Situation |
|---|---|---|---|---|
| 1 | Minority | 1 | 2 | Mixed neighborhood |
| 2 | Majority | 5 | 2 | Mixed neighborhood |
| 3 | Majority | 3 | 1 | Majority enclave |
| 4 | Minority | 0 | 2 | Minority enclave |
| 5 | Majority | 5 | 0 | Most dense area |
| 6 | Minority | 1 | 1 | Isolates |
| Totals | | 15 | 8 | |

nect the rules of the exercise to inequality in job opportunities.

*Majorities are given more string than minorities.* Why are majority members given more ties? Students should speculate on those conditions that hamper the ability of minorities to build many ties. What advantages in building ties do majority members have in reality? For example, why would we expect men to have more ties than women? What constraints do some women face in making new connections to others? One area worthy of focus is the difference in resources required to build strong versus weak ties. Minorities tend to build stronger ties. This reflects a greater need for social support among minorities coupled with a lack of opportunities for building far-reaching ties. Together these factors work to constrain network building among some groups. Why do minority groups need stronger ties? Can students come up with an example of this need from other class readings?

*Majorities are mobile while minorities are immobile.* Why are majorities allowed to move around the room, and what real-life resources do they possess that help them? Conversely, what constraints do minorities face? Women provide a particularly easy example for students to work through in discussing this rule, given the constraints on their mobility owing to greater child care responsibilities and lower pay. Another example is the "steering" of ethnic or racial groups into certain neighborhoods by real estate agents. What role does racism play in some groups' mobility or lack thereof? What role do economic resources play?

*Members of each group must have at least one intragroup tie.* The rule concerning homophily (the tendency of individuals to make ties to others like themselves) allows students to discuss the role of both prejudice and self-interest in forming social relations. This is also a good forum for discussing the issues of power surrounding the ability to force ties with others and the ability to reject unwanted ties. Why would members of some groups be interested in fostering intragroup connections? Can students think of reasons that women would seek out relations with other women? What about ethnic groups?

These suggestions provide rough guidelines for the discussion surrounding the rules. Instructors should encourage students to formulate their own theories using examples from disadvantaged groups in American society, especially emphasizing those groups that Granovetter (1974) and Travers and Milgram (1969) found to be less successful. Why, for example, would rural people have fewer ties than urban dwellers? Why are the poor less mobile? Why would we expect whites to have relatively few ties to people of color? While there are categorical influences in each of these situations, the purely structural elements bear emphasizing.

## ALTERNATIVE APPLICATIONS

Although we tied our explanation of the exercise to a particular substantive issue, the basic exercise will always create a situation where one group occupies a disadvantageous position in the social structure. Thus, the basic exercise offers a variety of potential uses. Below, we provide briefly two additional applications of the basic exercise. Instructors should adapt the exercise to reflect their own substantive interests.

*Application Two: Interlocking Directorates*

Modified, the network exercise can illustrate concepts and issues present both in elite theory (Domhoff 1995) and in theories of the corporate class (Useem 1978) by modeling interlocking directorates. The basic network-building exercise should be modified so that a privileged individual is called a "large, multinational conglomerate," while unprivileged individuals are called "small, regional or local businesses." A "tie" represents a relationship between two corporations through their boards of directors and the "valuable object" represents inside information or a colluding opportunity that can be passed between corporations to increase their competitiveness and profitability. The suggested reading for this applica-

tion is the chapter on the corporate class in *Social Stratification and Inequality* (Kerbo 1991).

After creating the network, the discussion may include:

- the greater number of ties linked to banks and their ability to centralize ties,
- the greater amount of mobility indicating both easier access to markets and the advantages of diversification, and
- the differential power to accept strings as tied to economic dominance and bargaining power.

*Application Three: World Systems Theory*

This network exercise can also illustrate the differential power of nations due to their world-system position (Snyder and Kick 1979; Wallerstein 1972). Briefly, by ignoring semi-peripheral countries, students could be divided into the core (privileged) and periphery countries (unprivileged). A suggested reading for students on this topic is the article "World-System Theory" (Chirot and Hall 1982). After completing the network, interpretations of the rules might include the ideas that:

- more ties indicate membership in different economic and treaty organizations,
- more mobility indicates the differential presence of ambassadors and other political and economic liaisons, and
- differential power to accept strings indicates foreign firm and investment influence.

## CONCLUSION

The exercise proposed in this paper gives students the chance to build a social network and then investigate how network position influences opportunity.[4] Outside of the usual problems that instructors encounter when trying to get students to talk about sensitive subjects such as race or gender, few additional potential problems exist with this exercise. If students become confused when trying to build the network, an instructor may stop the exercise and begin again. By going over the instructions explicitly before beginning the exercise, however, such confusion may be avoided. Additionally, in order to create a large enough network, the exercise requires a minimum of 30 students. The time involved in preparing the materials may become prohibitive for extremely large classes.

Pedagogically, the exercise achieves a number of goals. First, the visual nature of this exercise makes complex network material easy for students to grasp. Second, the exercise helps students avoid simplistic thinking by showing that structure is an important component of opportunities and constraints, in contrast to common conceptions of individual deficiencies. Third, students practice relating their classroom learning to real life. Fourth, for a more advanced understanding of networks, core concepts in network methodology (such as density and centrality) can be demonstrated. Further, as illustrated, the exercise is easily adaptable to a variety of substantive areas. Finally, instructors can make reference to the exercise during the remainder of the course to aid in discussing other issues of privilege, opportunity, and constraint.

[4]This exercise differs from other exercises that constrain opportunity with string (e.g., Goodman n.d.), in that string is used to represent constraints due to network ties, rather than as a tether constraining an individual to a single point in space.

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## APPENDIX. INSTRUCTION SHEET FOR THE EXAMPLE ON "FINDING A JOB"

In this exercise we are going to build a social network and see how the network structure influences job opportunities for minorities and majorities. Each of you received in your envelope a sign indicating whether you are a minority or majority member. Pin this sign to your shirt so we can all see it. You also received some string. This string represents your network ties. HOLD THE STRING BY THE KNOT and give the other ends of your strings to some of your classmates using the following rules.

**If you are a majority member:**

1. You have three pieces of string.
2. You can move about the room to give out your other string ends (as long as all three people to whom you are connected can hold on to their ends of the string at the same time).
3. Do not take any string that a minority member tries to give you if it will restrict your movement around the room. Do accept string from a majority member even if it does restrict your movement.
4. At least one of your ties must go to another majority member. You do not necessarily have to give any string to minority members.
5. You may accept as many pieces of string from others as you wish and you may have as many ties as you wish go to yourself (i.e., you do not have to give out all of your string if you do not want to or are unable to).

**If you are a minority member:**

1. You have two pieces of string.
2. You cannot move from your seat. You cannot even lean or stretch.
3. At least one of your ties must go to another minority member. If you cannot reach another minority member, that piece of string must go to yourself (i.e., you cannot give it out). You do not necessarily have to give any strings to majority members.
4. You may accept as many pieces of string from others as you wish and you may have as many ties as you wish go to yourself (i.e., you do not have to give out all of your string if you do not want to or are unable to).
5. Anyone can refuse to accept a string from you and you cannot force them to take it.

**Katherine Giuffre** is an assistant professor of sociology at The Colorado College. Her current project is a network analysis of the careers of fine art photographers.

**Pamela Paxton** is a graduate student at the University of North Carolina at Chapel Hill. Her research interests include political sociology, stratification, and quantitative methods. Her dissertation investigates the relationship between voluntary association membership and democracy.