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On Maintaining Social Norms: A Field Experiment in the Subway

The general question that motivated this research was: How are social norms maintained? Our focus was on the type of norm described by Garfinkel (1964) as “routine grounds of everyday activity,” norms which regulate everyday activity and which are neither made explicit nor codified. Scheff (1960) refers to this class of norms as “residual rules,” residual in the sense that they are the restraints on behavior that persist after the formal social norms have been sorted out of the analysis. Scheff isolates these rules on the basis of two criteria: (1) people must be in substantial agreement about them; and (2) they are not noticed until a violation occurs. These rules have been likened to the rules of grammar in that one can follow them without an explicit knowledge of their content and yet notice a violation immediately.

The fact that these residual rules are usually unexpressed creates a serious obstacle to their study: We are virtually inarticulate about them. When compared with formal laws, for example, which have been explicitly codified, residual rules have been left unarticulated by the culture.

An important distinction between these residual rules and laws can be drawn in terms of enforcement. The mechanism for the maintenance of laws is obvious.

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The entire law enforcement establishment is charged with the responsibility of keeping behavior within the law. Society is quite explicit about the consequences of breaking the law and about who should administer punishment. But who is charged with maintaining residual rules? What consequences should the residual rule breaker expect? Scheff posits a negative feedback system through which the rule breaker is returned to the straight and narrow, but he does not elaborate on the feedback process itself. Scott (1971), in an analysis of social norms from the point of view of the operant conditioning paradigm, defines social norms as "patterns of sanctions" and sanctions as the "reinforcing effect of interaction. (p. 85)" In this formulation, norms are maintained by the negative consequences of the violation. If this is the case, it should be possible to identify the negative consequences that are supposed to befall the violator. This, then, determined our strategy: we would violate a residual rule and observe the consequences to the violator.

The idea of studying this class of norms by their violation was introduced by Garfinkel (1964); his accounts contain qualitative evidence about the consequences of norm violation. The present research goes further in measuring the effects of violating a residual norm; it centers on a discrete and measurable response to the rule-breaker's action. We are thus able to quantify how people react to violated norms and by systematically changing features of the encounter, to treat the matter experimentally.

The residual rule selected for study was a rule of social behavior on the New York City subway system. The requirements of appropriate social behavior on the subway are, on the face of it, simple. People get on the subway for a very clear and specific reason: to get from one place to another in a brief period of time. The amount of interaction among the riders required for this purpose is minimal and the rules governing this interaction are widely adhered to. One rule of subway behavior that seats are filled on a first-come, first-served basis. Another implicit rule is one that discourages passengers from talking to one another. Even though riders are often squeezed into very close proximity, they are rarely observed to converse. The experimenters in this study violated these rules by asking people for their seats. This procedure allowed for discrete, measurable responses: people could either give up their seats or refuse to do so.

Several notions about the outcome of such a request may be formulated:

1. Scott's analysis predicts that such a violation would result in "negative consequences."
2. Scheff suggests that a possible outcome of a residual rule violation is a process of "normalization." Normalization is the attribution
of a meaning to the violation that would make it seem not to be a violation at all. The attribution—"the experimenter is asking because he is sick"—would be such a "normalization."

3. Most of the experimenters expected not only refusal but some form of active rebuke.

4. Common sense suggests that it is impossible to obtain a seat on the subway simply by asking for it.

Harold Takooshian obtained data on this last point. He asked 16 people to predict what percentage of requests would result in the offer of a seat. Answers ranged from 1% to 55%; the median prediction was that 14% of those who were asked would give up their seats.

Before we describe the experimental procedure, it is worth pointing out some things that the procedure was not. The procedure was not an attempt to obtain seats by demanding that riders give them up. Experimenters were instructed to be sure to phrase their questions as requests, not as demands. The procedure was not designed to question the subjects' right to their seats. The subjects' right to their seats was affirmed in the request; you do not request things from people which they do not rightfully possess. The procedure does not involve some momentous or unreasonable request. Nothing of any great or lasting value was requested from the subjects. It is, in fact, the observation that this request is so reasonable and yet so rare that suggests the operation of some strong inhibitory social force.

**PROCEDURE**

The experimenters were six male and four female graduate students. One woman was black; the other experimenters were white. Experimenters worked in pairs; as one performed the manipulation, the other recorded the data and observations.

The passengers on several mid-town routes of the New York City subway system formed the subject pool for the experiment. Experimenters were free to select their own subjects under the following constraints: Each experimenter asked one passenger from each of the following categories: man under 40 (by experimenter's approximation), woman under 40, man over 40, woman over 40. One member of each category was approached by each experimenter in each of the three conditions described in the following. Experimenters approached members of their own race only.

1. In the first condition (no justification), the experimenter approached a seated subject and said, "Excuse me. May I have your
The observer recorded the age and sex of the subject, whether or not the subject gave up the seat, and other reactions of the subjects and other passengers. Information about the time of day, subway line, and nearest station was also recorded.

As Table 3.1 shows, 56% of the subjects got up and offered their seats to the experimenters. An additional 12.3% of the subjects slid over to make room for the experimenter. (Experimenter had been instructed to ask for seats only if all of the seats in a car were taken, but it sometimes occurred that, although there did not appear to be any seats, room could be generated if the passengers squeezed together.) If these two responses are combined, we see that 68.3% of the subjects obtained seats by asking for them.

2. A second condition tested the hypothesis that subjects gave up their seats because they assumed the experimenters had some important reason for requesting it. In order to rule out this assumption, experimenters were instructed to say “Excuse me. May I have your seat? I can’t read my book standing up.” The

<table>
<thead>
<tr>
<th>TABLE 3.1 SUBWAY EXPERIMENTS: RESPONSES IN EACH EXPERIMENTAL CONDITION</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>No Justification Condition</strong></td>
</tr>
<tr>
<td>Subjects who gave up their seats</td>
</tr>
<tr>
<td>Subjects who slid over to make room for E</td>
</tr>
<tr>
<td>Subjects who did not give up their seats</td>
</tr>
<tr>
<td><strong>Trivial Justification Condition</strong></td>
</tr>
<tr>
<td>Subjects who gave up their seats</td>
</tr>
<tr>
<td>Subjects who slid over to make room for E</td>
</tr>
<tr>
<td>Subjects who did not give up their seats</td>
</tr>
<tr>
<td><strong>Overheard Condition</strong></td>
</tr>
<tr>
<td>Subjects who gave up their seats</td>
</tr>
<tr>
<td>Subjects who slid over to make room for E</td>
</tr>
<tr>
<td>Subjects who did not give up their seats</td>
</tr>
<tr>
<td><strong>Written Condition</strong></td>
</tr>
<tr>
<td>Subjects who gave up their seats</td>
</tr>
<tr>
<td>Subjects who slid over to make room for E</td>
</tr>
<tr>
<td>Subjects who did not give up their seats</td>
</tr>
</tbody>
</table>

*Overall Chi square for four conditions collapsing subjects who gave up their seats with those who slid over = 9.44, df = 3, p < .05.
*^Z test between No Justification and Trivial Justification conditions (collapsing as above): Z = 2.3, p < .05.
*"Z test between No Justification and Overheard conditions (collapsing as above): Z = 2.7, p < .05.
*"Z test between No Justification condition and Written condition (collapsing as above): not significant.
experimenter stood holding a paperback mystery. It was expected that by supplying this trivial reason, experimenters would receive fewer seats. The expectation was confirmed; experimenters received significantly fewer seats (41.9% of the requests, z = 2.3, p < .05). In Scheff’s terms, the trivial justification prevented the process of normalization; subjects could not as easily create some adequate justification for the request.

3. A third condition was included because we believed that subjects might have been so startled by the request that they didn’t have time to formulate an adequate reply. It seemed that they might have surrendered their seats because it was easier to do so than to figure out how to refuse in the brief time allowed. This condition was, therefore, designed to allow more time to formulate a reply.

To do this, it was necessary to alert the passenger that a seat might be requested. An experimenter and confederate entered the subway car from different doors and converged in front of the subject. They then engaged in the following conversation, while giving the impression that they were strangers: E to confederate, “Excuse me. Do you think it would be alright if I asked someone for a seat?” The confederate replied “What?” E repeated, “Do you think it would be alright if I asked someone for a seat?” The confederate replied, noncommittally, “I don’t know.”

This conversation was enacted in a sufficiently loud voice so that the passengers seated in front of the pair would definitely overhear it. The seated passengers would be alerted to the possibility that one of them might be approached with a request to surrender his or her seat. It gave the seated passengers time to formulate a response to the request, eliminating the startle component of the earlier conditions.

Thus, after acting out the foregoing exchange, the experimenter paused for approximately 10 seconds, then turned to the nearest seated passenger, and requested his or her seat. In this condition, experimenters received seats only 36.5% of the time, compared to 68.3% in Condition 1. The additional time between the overhearing of the conversation and the direct request was used to advantage. Subjects were better prepared to turn down the request.

4. Finally, we wished to separate the content of the request from the oral manner in which it was delivered. An orally delivered question directed to a person seems to demand an immediate oral response. We wondered whether a written message would reduce the demand for an immediate and obliging response. Accordingly, in this condition, the experimenter stood in front of the subject and wrote the following message on a sheet of notebook
paper: "Excuse me. May I have your seat? I'd like very much to sit down. Thank you." The experimenter then passed the message to the subject, saying, "Excuse me." We expected fewer seats than in the basic variant, as the request on paper seemed less direct and somewhat more distant, especially since the subject was not forced to engage the experimenter in eye contact as he formulated a reply. Our expectation was wrong. Experimenters received seats 50.0% of the time, a nonsignificant decrease from the initial condition. (Each experimenter carried out this procedure twice rather than four times; the overall \( n \) equaled 20.) The reason for this result is not clear. This method seemed to add a touch of the bizarre to the procedure, perhaps adding to the subject's eagerness to end the whole interaction by simply giving up his seat.

Observers also recorded other aspects of the subjects' reactions. Subjects often had a vacant and bewildered facial expression. Of the subjects who gave up their seats in the initial condition, 70% did so without asking, "Why?" Other subjects responded by simply saying, "No." Some subjects didn't seem to be distressed at all. Subjects who attributed sickness to the experimenter were often very concerned and comforting.

Information was also gathered about the reactions of other passengers who witnessed the incident. On a few occasions, other passengers openly chided a subject who had given up a seat. A more common reaction was for one rider to turn to another and say something such as, "Did you see that? He asked for a seat!" Such a comment points to the abnormal nature of the event and invites criticism of it. Witnesses to the exchange often turned and stared at the experimenter as he or she left the car.

The effects of the sex and age of experimenters and subjects are noted in Tables 3.2 and 3.3. Although these variables yield substantial differences in results, they are somewhat tangential to our main thesis and are not discussed in detail here.

An important aspect of the maintenance of social norms is revealed in the emotional reaction of the experimenters. Most students reported extreme difficulty in carrying out the assignment. Students reported that when standing in front of a subject, they felt anxious, tense, and embarrassed. Frequently, they were unable to vocalize the request for a seat and had to withdraw. They sometimes feared that they were the center of attention of the car and were often unable to look directly at the subject. Once having made the request and received a seat, they sometimes felt a need to enact behavior that would make the request appear justified (e.g., mimicking illness; some even felt faint).

We introduced our study partly in terms of the operant conditioning paradigm proposed by Scott as a framework for the understanding of social norms. What implications do our results have for this position? The
TABLE 3.2 EFFECT OF SEX OF EXPERIMENTER AND SUBJECT ON ACCEDING TO REQUEST (FOR ALL CONDITIONS)

<table>
<thead>
<tr>
<th>Sex of experimenter</th>
<th>Sex of subject</th>
<th>No. of subjects (n)</th>
<th>Got up (% of n)</th>
<th>Didn’t get up (% of n)</th>
<th>Slid over (% of n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>M</td>
<td>45</td>
<td>40.0</td>
<td>53.3</td>
<td>6.7</td>
</tr>
<tr>
<td></td>
<td>F</td>
<td>40</td>
<td>30.0</td>
<td>65.0</td>
<td>5.0</td>
</tr>
<tr>
<td>Total</td>
<td>(M + F)</td>
<td>85</td>
<td>35.3</td>
<td>58.8</td>
<td>5.9</td>
</tr>
<tr>
<td>F</td>
<td>M</td>
<td>30</td>
<td>66.7</td>
<td>26.7</td>
<td>6.7</td>
</tr>
<tr>
<td></td>
<td>F</td>
<td>29</td>
<td>34.5</td>
<td>51.7</td>
<td>13.8</td>
</tr>
<tr>
<td>Total</td>
<td>(M + F)</td>
<td>59</td>
<td>50.8</td>
<td>39.0</td>
<td>10.2</td>
</tr>
</tbody>
</table>

TABLE 3.3 EFFECT OF EXPERIMENTER SEX AND SUBJECT AGE ON ACCEDING TO REQUEST (FOR ALL CONDITIONS)

<table>
<thead>
<tr>
<th>Age of subject</th>
<th>Sex of experimenter</th>
<th>No. of subjects (n)</th>
<th>Got up (% of n)</th>
<th>Didn’t get up (% of n)</th>
<th>Slid over (% of n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 40</td>
<td>M</td>
<td>42</td>
<td>54.7</td>
<td>42.8</td>
<td>2.5</td>
</tr>
<tr>
<td></td>
<td>F</td>
<td>30</td>
<td>63.3</td>
<td>30.0</td>
<td>6.7</td>
</tr>
<tr>
<td>Total</td>
<td>(M + F)</td>
<td>72</td>
<td>58.3</td>
<td>37.5</td>
<td>4.2</td>
</tr>
<tr>
<td>Over 40</td>
<td>M</td>
<td>43</td>
<td>27.9</td>
<td>62.9</td>
<td>9.2</td>
</tr>
<tr>
<td></td>
<td>F</td>
<td>29</td>
<td>37.9</td>
<td>48.2</td>
<td>13.9</td>
</tr>
<tr>
<td>Total</td>
<td>(M + F)</td>
<td>72</td>
<td>31.9</td>
<td>57.0</td>
<td>11.1</td>
</tr>
</tbody>
</table>

answer depends on how one interprets “patterns of sanctions” which Scott holds maintain social norms. If this phrase is interpreted in its most simple and direct sense, and in a way consistent with the operant paradigm, it means the objectively specifiable response of the social environment to the violation. If we use this interpretation, the operant analysis does not work. The response on the part of others to a request for a seat is usually to grant the request. The 68.3% rate with which experimenters received seats corresponds to a variable ratio schedule of positive reinforcement (VR2). Skinner (1953) has found that behavior reinforced under this schedule is enhanced rather than discouraged. If we take “patterns of sanctions” to include the internal, emotional effects of the request which are not produced by the environment but which are direct accompaniments of the experimenters’ behavior, the analysis has some merit, but it leads directly to the question: Why does the act of making this simple request cause such an acute emotional response?

One might approach this question by focusing on the content of the
request; after all, the experimenters did ask for a seat from someone when they had no clear right to do so. But this focus on the seat seems misguided. The intensity of the emotion the experimenters experienced is incommensurate with the small cost involved in the subjects' giving up their seats. The significance of the request lies not in the seat (that is not the heart of the matter), but in the redefinition of the immediate relationship between experimenters and subjects that the request involves. Since it is this disruption of relationships that constitutes the essence of the violation, it can better be understood as a breach of a structure of social interaction than as merely a violation of rules of equity in interaction.

One analysis of the structure of social interaction that may help us to understand the sources of this effect has been provided by Goffman (1959). His description of the breakdown of interaction that results when an actor discredits his role fits well the description our experimenters gave of their experiences:

At such moments the individual whose presentation has been discredited may feel ashamed while the others present may feel hostile, and all the participants may come to feel ill at ease, nonplussed, out of countenance, embarrassed, experiencing the kind of anomy that is generated when the minute social system of face-to-face interaction breaks down (p. 12).

One might argue with some cogency that the experimenters were playing a social role, that of a subway rider, and that they discredited it by asking for the seat. But this use of “role” and “discrediting” seems strained and forced. Our results indicate, rather, that this “anomy” is a more general phenomenon resulting directly from doing something that “just isn’t done” in a particular setting, whether it is related to the performance of any important social role or not.

This interpretation is consistent with Berger and Luckmann’s argument (1967, cf. pp. 53–67) that the primary and essential means of social control is the sheer objectivity of the social world. They argue that it is the immediate and unreflective perception by actors of “the way things are done” which stabilizes individual conduct and ipso facto the social order. Under this perspective, both the sanctions that Scott considers and the discrediting of identity that Goffman has explored are secondary; that is, they are derivative of this basic means of control.

To be sure the concept of “those things that just aren’t done” is itself a complex one, containing both a statistical proposition (such actions do not occur) and a normative proposition (such actions ought not to occur). Moreover, there remains the problem of specifying the precise content of those things that “just aren’t done,” a discussion we shall not develop here.

The results of our experience in doing something that “just isn’t done” suggest that knowledge of the objective social order controls
behavior not only cognitively (people may simply never have thought of asking for a seat), but emotionally: actions outside of understood routine paths appropriate to the social setting, at least in this case, give rise to an intense, immediate, inhibitory emotion. This emotion restricts individual action to the routine patterns that constitute the stable background of everyday life.

NOTES

1. Although it might seem to be a simple matter to say “No” to the request, as Goffman (1971) points out, requests demand either compliance or an “accounted denial.” That is, one does not merely say “no” to a polite request, one gives a justification for saying “no.” It takes time to realize that a justification is not required in this case or to construct one. Many subjects may have given up their seats simply because they didn’t know how not to.

2. If subjects asked, “Why?”, experimenters were instructed to respond, “I’m very tired.” If the subject proposed a reason, “Are you sick?”, the experimenter was to agree.

3. Even if we allow this more liberal interpretation of “patterns of sanctions” (more liberal, probably, than Scott intended), an operant analysis of the problem is not without its problems. Such an analysis would be required to argue either that all of our experimenters had been severely traumatized by asking for a seat in the subway in the past (an improbable assumption, especially for those experimenters new to the city), or that the emotion results from “stimulus generalization” from similar experiences. This notion of generalization is both vague and, as Chomsky (1959) has pointed out, mentalistic.

4. The exact nature of this inhibitory emotion is open to further inquiry. It might be argued that the affect produced was guilt over either taking the seat or bothering the passenger. But the seat is not a very important matter, nor were the riders lastingly disturbed. Further, the emotion was confined to the subway car itself. As soon as experimenters left the car they felt thoroughly at ease. This emotion, rooted in the situation, seems closer to embarrassment than guilt. Harold Takooshian (1972) has proposed an empirical test. He has suggested that the procedure be changed such that an experimenter stands before a confederate (preferably an older woman) and bluntly ask her for her seat, which she reluctantly surrenders. She is then to stand in front of the experimenter as he makes himself comfortable in her seat. The question is whether the experimenter would feel great tension even though there is absolutely no reason for him to feel guilt. The experimenter may find himself feeling embarrassed nonetheless sitting there in the sight of the other passengers.

5. A question remains as to whether this inhibition against substantial interaction among riders is functional. On the one hand, this inhibition simplifies the situation considerably for users of the subway. Since it is common knowledge that everyone minds his own business on the subway, a rider is free to assume a passive posture with regard to other riders. He need not be prepared to respond to demands from all those who surround him either for his attention or for more substantial involvement. On the other hand, daily contact with the by
The Idea of Neighborhood

To understand the problem a sociologist has in handling the concept of neighborhood, the reader must retrieve the cognitive maps of childhood. If you grew up in a large city, you knew best those living on your own block. Awareness of the city radiated outward, with the density of information diminishing rapidly with the distance from home. Beyond a few blocks on either side, street names grew vague and faces unfamiliar. The area of comfortable familiarity constituted the experience of neighborhood. (For those raised in Brooklyn or the Bronx, psychological boundaries were set at 5 ± 2 streets from one’s home stoop.)

Yet we know that cities do not consist of an indefinitely large number of neighborhoods each centering on one of millions of inhabitants only a slight spatial remove from his fellows. Rather there is a small number of social labels applied to definable geographic areas. Because population characteristics of a city are continuously variable, with no clear demarcation between one side of the street and the other, society imposes categorical labels on specific geographic realms. Neighborhood categories are not simply found in nature, but are consensually imposed definitions. This is the first sense in which communities are socially constructed according to Suttles’s analysis.

A neighborhood label, once affixed, has real consequences, Suttles points out. For outsiders it reduces decision-making to more manageable terms. Instead of dealing with the variegated reality of numerous city streets, the resident can form a set of attitudes about a limited number of social categories and act accordingly. Thus a mother will instruct her child to stay out of Harlem, or judge that a boy who lives in Riverdale is probably acceptable for her daughter. Newcomers may be attracted or repelled by areas defined with a high or a low prestige label. For

This paper was a review of The Social Construction of Communities, by Gerald D. Suttles, Chicago: University of Chicago Press, 1972. It was first published in Science 178 (November 1, 1972), pp. 494–495. Copyright © 1972 by the American Association for the Advancement of Science. Reprinted by permission.
those who live within it, the neighborhood defines areas relatively free of intruders, identifies where potential friends are to be found or where they are to be cultivated, minimizes the prospects of status insult, and simplifies innumerable daily decisions dealing with spatial activities. Thus the mental map of neighborhoods is not superfluous cognitive baggage, but performs important psychological and social functions.

But what sets the boundaries on neighborhoods: ethnic homogeneity, physical barriers, economic characteristics? All of these play a part, but in the final analysis it is a creative social construction. Most often the neighborhood boundary is an arbitrary street or intersection, rather than a physical barrier. Thus, in New York City, Harlem “begins” on the north side of 96th Street. The demographic approach, which equates neighborhoods with particular concentrations of ethnic or racial types, is less interesting for Sutlles than the question “How are varying proportions of racial, ethnic, and income groups selectively highlighted in the reputation of local communities?”

If the neighborhood exists first as a creative social construction, it nonetheless possesses a number of important properties. First, it becomes a component of an individual’s identity, “a stable judgmental reference against which people are assessed….” (That is why when you ask a person what city he comes from he will tell you without blush, but when you ask about his neighborhood the question may be considered too personal for casual conversation; for the neighborhood is a status-differentiating component.) A neighborhood may derive its reputation from several sources: first, from the master identity of the area of which it is a part (Yorkville is part of the fashionable East Side); second, through comparison and contrast with adjacent communities; and third, from historic claims, a game, Sutlles points out, in which all communities can win, since the new community offers the image of an area unshackled by tradition, and the older community takes pride in its association with the past. The best time to capture the “meaning” of a neighborhood, it occurs to this reviewer, is on moving day, when two sets of pertinent associations are revealed: those generated by people moving in, and those disclosed by people moving out.

Readers will also recognize that neighborhoods deemed “desirable” need not always have the best physical features. Consider the upper East Side in New York City. Unless an apartment overlooks Central Park, it is an area devoid of breathing space, consisting of stone towers built on acres of unrelied pavement. Park Avenue is a fuming canyon of hydrocarbons. It is a wonder not only that people will pay exorbitant Park Avenue rents and maintenance charges but that they are willing to live there at all. Note that Harlem, which in popular imagery possesses only rat-infested slums, actually contains a considerable amount of attractive housing. But none of this figures in the public image of these two areas.
The images are social constructions linked to but not wholly identifiable with the facts.

We define urban communities, therefore, because the concept simplifies the complicated and inchoate qualities of the city, dividing it into differentiable segments and thereby rendering it cognitively manageable.

What then of the idea of a community as first and foremost a group of people bound together by common sentiments, a primordial solidarity? In Suttles’s eyes, the view is poorly realized in fact and represents an overromanticized view of social life. Communities do lead to social control, they do “segregate people to avoid danger, insult, and status claims”; but whatever sentiments are engendered by neighborhoods are strictly tied to functional realities and can in no sense be treated as gratuitous expressive solidarity. Moreover, the notion of a closely interdependent, self-contained community, having its prototype in the rural village, was never an appropriate model for urban living. Of greater pertinence to an analysis of urban life are the multiple levels of community organization in which the resident participates.

The smallest of these units is the “face block.” For children it is the prescribed social world carved out by parents. It is here that face-to-face relations are most likely, and the resulting institutional form is the block association. Next, in Suttles’s typology, is the “defended neighborhood,” which is the smallest segment of the city recognized by both residents and outsiders as having some corporate identity, and possessing many of the facilities needed to carry out the daily routine of life. The defended neighborhood frequently lacks official recognition, and its boundaries, because they have no legal status, are often precarious. Street gangs arise which protect it from unwanted incursions by outsiders.

The urban resident also participates in the “community of limited liability,” a larger realm possessing an institutionally secure name and boundaries. The concept, originally developed by Morris Janowitz, emphasizes the “intentional, voluntary, and especially the partial and differential involvement of residents in their local communities.” Frequently an external agent, such as a community newspaper, is the most important guardian of a community’s sense of boundaries, purposes, and integrity. A single individual may be defined as living in several such communities. The multiple claims on the person may limit and even paralyze active involvement in any of them.

Even larger segments of the city, such as an entire East Side area, may also take shape in response to environmental pressures, creating an “expanded community of limited liability.” Thus an individual may find himself picketing to keep a highway not just out of his neighborhood, but out of the entire South Side.

Thus what Suttles teaches us is that the concept of neighborhood is not adequate to handle the multiple levels of urban organization in which the individual participates. Varied levels of community organization are
created as responses to the larger social environment. Neighborhoods cannot be seen as a society in microcosm. They never were, and never can be. The urban community is a form of social differentiation within a total society.

Does Suttles’s analysis have a bearing on the contemporary issue of “community control”? It suggests, first, that the fully self-contained community within the city is a fiction. The urban community can be a differentiated but never a fully autonomous unit within the larger urban context. Second, Suttles points out that the idea of a centralized government is not incompatible with a well-served local community. “One of the sources of community weakness in most American cities is that many mayors are responsible to local communities but have little direct recourse to the federal levels at which major power and resources are located.” In Sweden, in contrast, the mayors of certain local communities are appointed by the central government but this strengthens rather than weakens the resources available to the community.

It is a central theme of Suttles’s analysis that “total societies are not made up from a series of communities, but communities are areas which come into being through their recognition by the wider society.” Suttles overstates the case. Sometimes cities do develop through the coalescing of smaller communities, which continue to maintain their identity. London is a good example. To some extent it depends on the phase of a city’s development under discussion. In later stages of development, when a city’s origins are no longer relevant to its functioning, the social-constructive approach may well constitute the dominant mode of defining neighborhoods. More important, is the point really worth a great deal of theoretical fuss?

The book has other faults: It is repetitious and disjointed, with a number of essays only tangentially related to the main theme. Yet these flaws are unimportant alongside the book’s considerable achievements. First, it helps break away from the limiting view of Park, Burgess, and others that “a city consists of a mosaic of little worlds which touch but do not interpenetrate.” The urban community is a form of social differentiation within a total society. Second, Suttles teaches us that the concept of neighborhood is not adequate to handle the multiple levels of urban organization in which the individual participates. Participation ranges from the face block to larger segments of the city. Third, Suttles shows that there is no necessary discontinuity between how we experience neighborhoods, communities, cities, and so on and the sociological concepts needed to describe them. Neighborhoods are not primarily segments of real estate but collective representations existing in the minds of inhabitants, and attaining reality through social consensus. This is a stimulating viewpoint of great heuristic value. Fourth, he demonstrates that the phenomenon of mental maps, developed by Kevin Lynch and others, is not a disembodied esthetic or cognitive phenomenon but is part of the ongoing
life of individuals, with practical meaning and significance. Fifth, Suttles translates the concept of territoriality, so foolishly caricatured in the work of Ardrey, Morris, and others, into its proper human context. He recognizes the importance of territoriality in human life, without equating it with its animal expression. Finally, his book is a work of considerable originality and insight; the author is a keen observer, bringing the same order of sensitivity to urban analysis that Erving Goffman has applied to the study of small-scale social interaction. And in both cases, we emerge with a sense of clarified perception.
Nothing is more characteristic of urban life than the fact that we often gain extreme familiarity with the faces of a number of persons, yet never interact with them. At my railroad station, for example, I have stood at a commuter station for several years, often in the company of people whom I have never gotten to know. The faces and the people are treated as part of the environment, equivalent to the scenery, rather than persons with whom one talks, exchanges greetings.

Harry From, one of my students, wrote that the familiar stranger is the end product of a process, which like friendship, takes time. Moreover, it is a covert process and often leads to a frozen relationship. To become a familiar stranger a person (1) has to be observed, (2) repeatedly for a certain time period, and (3) without any interaction.

There is a powerful rule at work among familiar strangers; the further away from the scene of their routine encounter, the more likely they will interact with each other. Thus if they encounter each other in a faraway country, they are most likely to acknowledge each other, engage in conversation, and even experience a warm surge of familiarity and friendship. Why is it that people who have not in

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several years spoken to each other, while standing in each other’s presence, are in a distant setting moved to address each other as persons?

Barriers build up between familiar strangers which become difficult to surmount, so that when the familiar stranger needs to make a request, he prefers to make it to a total stranger rather than a familiar though hitherto unacknowledged face.

Extraordinary incidents, such as a flood, help move people out of their impersonal relations. The incident itself is temporary, and thus involves not an extended commitment, but only one that lasts as long as the temporary disruption of routine.

A few years ago several students at The City University of New York attempted to study the phenomenon of the familiar stranger. They got up early in the morning, and went out to the commuter stations that feed into New York City. They photographed large clusters of commuters, many standing back to back at the station, or staring straight ahead (see Figure 6.1). Each figure in the photograph was numbered, the photographs were duplicated, and the students returned the next week distributing the photographs to the commuters, with a cover letter explaining our purposes, and a questionnaire dealing with the phenomenon of the familiar stranger. We found that 89.5 percent of those questioned reported at least one familiar stranger. The average commuter claimed 4.0 individuals at the station whom he recognized but never spoke to, compared to a mean of 1.5 individuals with whom he conversed. Some familiar strangers turn out to be “socio-metric stars” in that they are recognized by a large proportion of commuters at their station, even if never spoken to.

Many passengers told us they often think about their fellow commuters, trying to figure out what kind of lives they lead, what their jobs are like, etc. They have a fantasy relationship to familiar strangers that may never eventuate in action. But it is a real relationship, in which both parties have agreed to mutually ignore each other, without any implication of hostility. Indeed, sometimes only the right circumstance is needed to change the relationship. Consider this: A woman collapsed on the streets of Brooklyn, not far from her apartment house. She had been a familiar stranger to another resident of the street for years. The resident immediately took responsibility for the unconscious woman, not only calling an ambulance, but riding with her to the hospital to make certain she was treated properly, and to assure that her possessions were not stolen by ambulance attendants. She said later that she had felt a special responsibility for the woman, because they had seen each other for years, even if they had never spoken. The familiar stranger status is not the absence of a relationship, but a special form of relationship, that has properties and consequences of its own.

Why do familiar strangers exist? It is a response to overload: in order to handle all the possible inputs from the environment we filter out inputs so that we allow only diluted forms of interaction. In the case of the
FIGURE 6.1
Typical photographs distributed to commuters, used in the study of the familiar stranger.
familiar stranger, we permit a person to impinge on us perceptually, but close off any further interaction. In part this is because perceptual processing of a person takes considerably less time than social processing. We can see a person at a glance, but it takes more time to sustain social involvement. If the temporal relations were reversed, that is, if perception took a longer amount of time than social communication, a quite different phenomenon would result: We would typically talk with people whom we did not have time to visually perceive.
PART 3

The Individual
and the Group

INTRODUCTION

How is a group possible? Each participant in the group is a complex individual with purposes and motives of his own, and yet the group is able to function effectively, even with harmony. This must be due to the fact that each individual member adjusts his behavior with reference to the other participants; social psychologists attempt to understand the nature and extent of that adjustment. The effects of groups—small groups as well as the larger aggregation of individuals we term a crowd—are explored in the following pages.

Having made these general observations, it still becomes necessary to find a clear way to study group effects. For me, the decisive paradigm was contained in the group pressure experiments of Solomon E. Asch.

In Asch’s experiments, a group of four to six subjects was shown a line of a certain length and had to say which of three lines matched it. All but one of the subjects in the group had been secretly instructed beforehand to select one of the wrong lines on each trial. The naive subject was so placed that he heard the answers of most of the group before he had to announce his own decision. Asch found that under this form of social pressure, a large fraction of subjects went along with the group rather than accept the unmistakable evidence of their own eyes.

I had the good fortune to work for and with Professor Asch at both Harvard
and Princeton. Asch was inspiring, particularly when he was not teaching formally but was simply exposing his cerebral processes in the course of conversation. He is a man of quiet intellectual brilliance.

Most of the papers in this section are variations on the theme of Asch’s experiment. I mean “variations” in the musical sense of the term, the way Brahms wrote variations on Haydn. As in music, sometimes the theme of the master is clear and little adorned. Sometimes the original motif is all but obscured, as the variations take off in new directions and become virtually independent of their origins. Probably the master doesn’t always like the way his themes are shifted in key and emphasis. Tant pis. For me, Asch’s experiment rotates as a kind of permanent intellectual jewel. Focus analytic light on it, and it diffracts energy into new and interesting patterns.

Indeed, in my graduate teaching, I have often designed variations of his experiment to carry out as a class exercise, or simply as thought-experiments. The following ten such variations are among my favorites.

1 Pro-social conformity. In Asch’s experiment, the group is shown to limit, constrain, and distort the individual’s response. One variant examined the pro-social effects of group pressure. Subjects were free to decide on an amount to contribute to a series of charities. Confederates upped the amount for each of eight charities, and, under the influence of the group, subjects donated ever-increasing amounts to the charities. “Liberating Effects of Group Pressure” (p. 231) continues this tradition of constructive conformity.

2 Sequential influence. In Asch’s experiments, the naïve subject faces the unanimous opinion of a simultaneously assembled group. In this variant, subjects are exposed to the unanimous opinion of several individuals, but each confederate confronts the subject individually, on different days, during the course of a week. The influence summates and approximates that of a simultaneously assembled group.

3 Influencing the alienated. How would a group influence a person who was negatively oriented toward it? Students were asked to design experimental techniques for influencing the alienated. Some students believed the group can induce the behavior it wants by publicly calling for the opposite, on the assumption that the hostile person will perform contrary to what he thinks the group wants. Others emphasize that it is better to work on reducing the alienation.

4 Action conformity. Asch’s subjects yield in regard to a verbal judgment. But can the group induce the person to perform actions he would not otherwise engage in? What is the range of signifi-
cant behavior that the group can shape? (See "Group Pressure and Action against a Person," p. 219.)

5 *Enduring effects of yielding.* In Asch's experiment, the consequence of the subject's yielding does not transcend the laboratory hour. It is a fully self-contained experience. Is this the basis of the group's power? Would a person as readily conform to the group in regard to acts that endure beyond the laboratory hour? For example, would subjects expose their foreheads to a permanent green dye if all of the confederates appeared to do so? Would a naive subject be willing to sign a marriage certificate if the group sheepishly did so? This is a critical and as yet untested variant.

6 *The group's response to pressure.* Asch's experiment examines how an individual responds to pressures exerted by a group. But how do groups respond when they are under the unanimous pressure of a larger field of groups? Asch's partnership variation touches on but does not fully develop this issue.

7 *The conformity of inaction.* Asch's subjects are influenced by a majority that takes a positive action (making a definite judgment). But can a group induce passivity by the example of its own inaction? This shades into typical bystander experiments.

8 *Forewarned subjects.* In this variant, we expressly informed subjects that from time to time members of the group would deliberately give incorrect answers. This changed the basic psychological character of the experience, but surprisingly, some subjects still went along with the group as a kind of reflexive imitation.

9 *Repetition of stimulus.* Subjects in an auditory variation of the Asch experiment (subjects heard two tones and were asked to indicate which was the longer; the group gave the incorrect answer) were free to request a repetition of the stimulus before giving their judgments. Subjects were therefore free to clarify their perception, but few subjects requested a repetition of the tones. This is particularly true of those who yield to the group in their judgment of tonal lengths. Their conformity is so deep, it does not permit them to reduce uncertainty, even when they have an opportunity to do so.

10 *Black box conformity.* In the Asch study, the subject and the group have equal access to the stimulus material. My student, Rita Dytell, carried out a "black box" variation, in which the group had access to the stimulus material but not the subject. This corresponds to the fact that we must often decide whether to accept judgments made by others on events which they have observed but which we have not.

Each variation, substantially inspired by the Asch paradigm, sheds
light on a new aspect of social influence and speaks to the immense fecundity of the original experiment.

There is a progression in the several experimental papers reprinted in this section. In "Nationality and Conformity," the effect of group pressure on individual judgments is studied and is shown to vary—a little—from one national setting to the next. The purpose was to use the Asch experiment as a measuring instrument to study the level of conformity in two national cultures. As a result of this experience, I became less interested in national cultures and more interested in the effects of group pressure. Surely it is not limited to changing a person's verbal pronouncement.

The issue of verbal conformity is, of course, extremely important. The entire climate of a community comes to be determined by the freedom which individuals feel to express themselves. The capacity of groups to stultify original expression or dissenting ideas is an important fact of social life. But conformity extends beyond the merely verbal. The very deeds of the person may come to be shaped by the group, and this notion is brought within an experimental framework in "Group Pressure and Action against a Person" (p. 219).

I have explained elsewhere (p. 127) how the obedience experiments are related to Asch's experiments twice removed—first by substitution of a consequential act for a verbal judgment, and then by focusing on the authority rather than the group. In "Liberating Effects of Group Pressure," we come full circle. The group breaks the yoke of authority, and by its example restores the person's integrity against authoritarian excess.

In real life, the constructive uses of group pressure go considerably beyond this experimental demonstration. Individuals frequently seek out groups whose pressures and standards will help them develop and maintain desired ends. We may welcome the pressures to conform to a group whose values are enlightened and which strengthens our own ideals.

The themes of individual submission to group pressure, the conflict of conscience and authority, and the constructive role that groups have on the individual seem to me central to an individual's experience with the social world. The basic fact of human experience is that we are born into a social matrix, yet each of us strives to be an individual. The social matrix is indispensable to our lives, equips us with language and the habits of civilized men and women, endows us with goals, values, and the needed company of one another. Yet once the values are given to us, they become our own and the individual must strive to maintain individual conscience, judgment, and critical intellect against the pressures of the crowd, and the assertive strength of doctrinaire authority.

What is most distinctive about people is what they have gotten from others: language, habits of rational thought, humane values. Yet to maintain what is best, an individual often needs to stand alone against the
crowd and against authority. A person internalizes these values and must then defend them even against the society that gave them. Though enormous pressures may bear down on a person to abandon critical intelligence, dispense with conscience, and surrender humanity, that person will often prove hardy and resilient, transcend the pressure of the moment, and reaffirm the power and integrity of one's own spirit. Well, as our experiments show, it does not always happen this way. But it remains a worthy ideal.

In addition to the experimental articles, an excerpt is reprinted from my dissertation, Conformity in Norway and France, completed in 1960. The excerpt on ethics (p. 215) is perhaps ironic in that the experiments on obedience were to become a few years later a focus of ethical controversy. Irrespective of the ethical status of the obedience experiment, the specific
implication of some critics that I was indifferent to ethical matters is hardly borne out by this early empirical research into experimental ethics.

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The Drawing Power of Crowds of Different Size

In a typical urban setting, when a group of people engage in an action simultaneously, they have the capacity to draw others into the crowd. The actions of the initial group may serve as a stimulus for others to imitate this action. A careful analysis of the details of crowd formation is of obvious interest to a society in which collective action plays an increasingly important part in social life. One theoretical formulation that bears on this problem is that of Coleman and James (1961).

Coleman and James assumed that there is a "natural process" by which free-forming groups acquire and lose members and thus reach specific maximum sizes. They have developed a model that generates a size distribution that closely approximates the actually observed size distribution of many thousands of groups. The central assumption of their model of acquisition and loss are "a constant tendency of a group member to break away, independent of the group, thus producing a loss rate for the group proportional to size; and an acquisition rate for each group proportional to the number of single individuals available to be 'picked up' [p. 44]." Thus the growth of a group is independent of the size of the group and dependent only upon the number of persons who are available to join the group. However, Coleman and James pointed out that "a contagion assumption—that is, an assumption that a person is more likely to join a large group than a small one [p. 44]," might be needed in their model. (Their use of the

term "contagion" is not entirely accurate, since this term does not signify in any direct way that a large group is more effective in attracting new persons than a small one. It is preferable, in this connection, to use the phrase "assumption of initial group size."

This paper reports on the effects which crowds of different sizes had on passersby, following the quantitative approach to the study of crowd behavior outlined by Milgram and Toch (1969).

A few of the basic concepts used in this study need to be clarified. First there is the stimulus crowd. This was provided by the investigators and varied in number from 1 to 15. If the crowd is to draw onlookers, then it must be exposed to an available population. The population may be finite, and thus exhaustible, or it may be continually replenished as in the present study. The population may also be in various states of activity, that is, sitting around (as at a beach) or moving along paths. The available population in the case of the present study consisted of the stream of

FIGURE 18.1
Photographs used in the analysis of crowd growth.
pedestrians moving along a major city thoroughfare. Finally, the crowd must exhibit some sort of observable action that the population can imitate or in some manner respond to. In the present study the stimulus crowd stood on the pavement and looked up at the window of a nearby building. This action, or parts of it, could be adopted by the passersby. The passerby could simply look up at the building where the crowd was staring without breaking stride, or he could make a more complete imitative action by stopping and standing alongside the crowd. Analyses were undertaken for both types of responses.

In sum, the investigators wanted to see in what degree crowds, varying in size from 1 to 15 persons, and all performing the same observable action, would draw persons into their activities.

**Method**

**Subjects**

The subjects were 1,424 pedestrians on a busy New York City street who passed along a 50-foot length of sidewalk during thirty one-minute trials. The study was conducted on two winter afternoons in 1968.

**Procedure**

A 50-foot length of sidewalk was designated as the area of observation. At a signal, flashed from the sixth-floor window of an office building across the street from this area of sidewalk, a group of confederates (stimulus crowd) entered the middle of the observation area, stopped, and looked up at the sixth-floor window. This gaze was maintained for 60 seconds. At the end of this period the group was signaled to disperse. After the area was cleared of the gathered crowd the procedure was repeated using a different size stimulus crowd. Five randomly ordered trials were conducted for each of the six different size stimulus crowds. The stimulus crowds were composed of 1, 2, 3, 5, 10, and 15 persons. Motion pictures were taken of the observation area for the 60 seconds during which the stimulus crowd maintained its gaze at the window.

**Data Analysis**

The motion pictures were analyzed to determine the total number of persons who passed through the observation area and their behavior. Pairs of judges counted the number of persons entering the field; within
this group, the number of persons who looked up; and finally the number of persons who stopped.

RESULTS

The first question is whether the number of persons who stop alongside the crowd increases as the size of the stimulus crowd increases. The data are provided in Fig. 18.2 (broken line). While 4 percent of the passersby stopped alongside a single individual looking up, 40 percent of the passersby stopped alongside a stimulus crowd of 15. An analysis of variance was performed on the mean percentage of persons who stopped alongside the crowd (Table 18.1). This analysis indicates that the size of the stimulus crowd significantly affects the proportion of passersby who stand alongside it.

But the influence of the stimulus crowd is not limited to those who stop and stand alongside it. For a larger number of passersby partially adopt the behavior of the crowd by looking up in the direction of the crowd’s gaze, while not, however, breaking stride and standing alongside it. Here again the influence of the stimulus crowd increases along with its size. While one person induced 42 percent of the passersby to look up (whether or not they also stopped), the stimulus crowd of 15, all looking in the same direction, caused 86 percent of the passersby to orient them-

FIGURE 18.2
Mean percentage of passersby who look up and who stop, as a function of the size of the stimulus crowd.
selves in the same direction (Fig. 18.2, solid line). An analysis of variance again confirms the difference in means (Table 18.2).

A trend analysis for unequal intervals was performed on the data (Gaito, 1965). There is a significant linear trend ($F = 101.7, p < 0.01$) and a nonsignificant quadratic trend ($F = 0.42$) for the passersby who stopped. However, for the passersby who looked up, there are both significant linear ($F = 57.2, p < 0.01$) and quadratic ($F = 11.6, p < 0.01$) components. This bears on a recent discussion of Gerard, Wilhelmy, and Conolly (1969). In their study, conformity increased in linear fashion as a function of group size, in contrast to Asch (1951), who found a curvilinear relationship. The present study shows that a single set of group-size manipulations can generate both types of functions, depending on the specific dependent variable selected for analysis.

A comparison of those who stop and those who look up shows that while both behaviors increase with the size of the stimulus crowd, the percentage of those who only look up is always higher than those who stop, regardless of the size of the stimulus crowd. It appears that the more demanding, in time or effort, the behavior, the less likely it is that the passerby will join it.

Two additional points need to be made. First, it is clear that while the effects of a precipitating group of a given size on the subsequent growth of the crowd were studied, the size of the stimulus crowd increased as

<table>
<thead>
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<th>TABLE 18.1</th>
<th>ANALYSIS OF VARIANCE OF THE PROPORTION OF PASSERSBY WHO STOP AS A FUNCTION OF THE SIZE OF THE STIMULUS CROWD</th>
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</thead>
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*p < 0.001.

<table>
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<th>TABLE 18.2</th>
<th>ANALYSIS OF VARIANCE OF THE PROPORTION OF PASSERSBY WHO LOOK UP AS A FUNCTION OF THE SIZE OF THE STIMULUS CROWD</th>
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</thead>
<tbody>
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*p < 0.001.
soon as persons joined it. Thus, the effect of a stimulus crowd of constant size was not studied. In order to do this it would be necessary to withdraw a member of the stimulus crowd as soon as a passerby joined it.

Second, the maximum size which the crowd attains is dependent not only on the initial size of the crowd, but also on the nature of the stimulus to which the passerby is directed. In the present study, passersby were oriented by the gaze of the crowd to a scene that had no special holding power. (Pedestrians looked up to the sixth floor of an office building where some dimly perceived figures were peering back from inside. It was not a scene of compelling interest.) If, instead, an acrobat were performing on the building ledge, the interest of the scene would likely hold crowd members for a longer period of time, and the crowd would grow to a larger maximum size within a one-minute interval (the size of the crowd at any given moment being equal to the initial stimulus crowd plus additions minus withdrawals). There is some logical basis for joining larger crowds: all other things being equal, the larger the crowd, the more likely its members are attending to a matter of interest.

The results of this study show that the number of persons who will react to, and join in, the observable behavior of a stimulus crowd is related to the size of the stimulus crowd. These findings contradict the acquisition assumption of the Coleman and James model. The acquisition rate is not, as they assume, dependent only upon the number of persons available to join the group. (For the present study, the mean number of such individuals was not significantly different for the different size stimulus crowds.) An assumption of initial group size is indeed necessary.

**NOTE**

1. This study arose out of a graduate seminar in social psychology conducted by the first author at The City University of New York. Among those who took part in the present study were Stuart Baum, Sheryl Bruder, Fay Crayne, Victor Ernoult, Susan Flinn, Bert Flugman, Henry Glickman, Michael Hoffman, Marcia Kay, Jo Lang, Elaine Lieberman, Nicholas Papouchis, Arthur Shulman, Henry Solomon, Sheila Sperber, and Mark Silverman. The study was supported by The City University of New York and by a small grant from the National Institute of Mental Health, Number 16284-01.

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PART 4

The Individual in a Communicative Web

INTRODUCTION

If the world were drained of every individual and we were left only with the messages that passed between them, we would still be in possession of the information needed to construct our discipline. For every truly socio-psychological phenomenon is rooted in communication. If influence is to be exerted by one person on another, some message must pass from the influencing source to its target, whether it be an eloquently persuasive argument, a fleeting scowl, or the distal messages that modern technology allows. By this fact, social psychology acquires scientific potential, for what passes from one person to the next necessarily enters the public and thus measurable domain.

Several articles in this section began as personal experiences that were eventually transformed into an experimental inquiry. Perhaps an account of the diffusion traceback study, which has not been previously published, best illustrates this interplay.

In 1954, I lived in a graduate dormitory at Harvard University. The dormitory rooms did not have private telephones, but there was a pay telephone in the hallway about 100 feet from my room. Students both made and received calls at the pay phone. The telephone often rang many times before a student bestirred himself to walk from his room to answer it, then summoned the person requested by the caller. The problem was that there was no norm or custom prescribing how
often to perform this civic chore. When the telephone rang, no one in the
dorm knew who it was for. Who then should answer it? As a possible
solution I devised a formula, inscribed it on an index card, and posted it
near the telephone. It stated: “To share equitably the burden of answering
this phone, students should answer the phone two times for each call they
receive. (This is to take account of those occasions when a call is received
for you, and you are not in.)” The message served as a guideline in a
previously normless situation.

Five years passed. I left the dormitory, spent a year in Norway and
one in France, then in 1959 I returned to Harvard. While making use of a
pay phone in a neighboring dormitory, I noticed near the telephone a card
that stated: “To share in the burden of answering this telephone, it is
traditional for students to answer the phone two times for each call he
receives . . . etc.” The notices were spread far and wide. This cultural item
had become diffused. It was now a tradition, yet it had started as the act of
a single person. That is how many items must work their way into the
general culture. A person inscribes a bit of graffiti: “Kilroy was here,” or,
“Taki 183.” It catches on, diffuses widely, and seems to be everywhere.
But is it possible to trace the item back to its original source?

The problem of tracing cultural items to their origin was again
revised in 1966 in a conversation with my colleague, Dr. Lane Conn. We
had begun our discussion with the premise that many items of informa-
tion, fads, and styles are spread in a community by person to person,
word-of-mouth communication. Verbal crazes, such as the now defunct
“swiffies” or “Polish jokes,” are one form which such communication can
take, whereas rumors and the widespread diffusion of antiscientific
attitudes represent another more significant level. We wondered whether
we could start with some item of information then circulating in society
and trace it backward to its point of origin by asking each individual to tell
us where he or she had learned of the item of information, and to
continuously move the inquiry one step backward until we found the true
origin of such a fad. To avoid the contaminating problem of the mass
media, we would work with items that were not likely to be communi-
cated over the radio or through newspapers. Our underlying model was
that information, jokes, or fads ultimately had a beginning in some human
source, and we could trace it back to that source. We speculated, for
example, that perhaps all “Polish jokes” which were then sweeping the
country may have started with a single beer-drinking piano player some-
where in a Chicago bar. And through our systematic network search we
would find him, much as the small world method zeros in on the target
person.

As it turned out, we did not launch this society-wide study, but the
following year my experimental social psychology class managed to
examine the diffusion-traceback phenomenon on a more modest experi-
mental scale.
The class initiated a message we hoped would diffuse throughout the community. Once the message had been circulated we would apply our trace-to-origin procedure. Since we knew the actual origin of the message, we would be able to assess the accuracy of the procedure, i.e., whether the procedure correctly brought us back to the known point of origin. First, we needed to create a message that could be passed along on a person-to-person basis. We did this by creating a little story, a joke, that anyone could hear by calling our telephone number. An automatic answering unit repeated the joke each time the number was called. (After some trial and error, we decided to use a moderately sexy joke for this purpose, one that seemed to appeal to Harvard freshmen! A sultry young voice at the other end of the line reminisced about a romantic evening, followed by the revelation that the caller was a father!)

To get the communication process going, we sent a postcard to each of five freshmen living in the Harvard Yard. The card stated: “Call this number, just for fun, 887-5532.” Our assumption was that the joke was so funny, the freshmen would pass the number on to their roommates, and so on. And this indeed proved to be the case.

A few hours after the postcards arrived, the calls started to come in. And they increased in frequency until our telephone line was jammed with calls. After 320 calls had been received, our machinery was so overloaded it broke down. Still, the 320 calls gave us enough diffusion data to initiate the second part of the study: to trace the entire pattern of diffusion and see if we could trace it back to the five Harvard freshmen who had received the original postcards.

We located people who had heard the joke by interviewing students in the undergraduate dining rooms and by placing an ad in a local newspaper. We asked each person where he had learned of the telephone number, then followed up on this information much as an epidemiologist would follow up on people known to have been infected with a contagious disease. Through careful and systematic work, the class was able to trace the diffusion network back to the original five freshmen. Thus, on a small scale, the diffusion traceback procedure worked well.

Mr. John Fryer, one of the students in the course, gave a precise account of the diffusion patterns:

... the information (about the phone number) stayed largely within the Harvard freshman class. Of the 123 persons who learned about the telephone number, 103 were Harvard freshmen. The other 20 persons included 7 residents of the towns of Arlington, Brighton, and Lincoln, 2 Radcliffe freshmen, 5 Wellesley students, 3 Harvard upperclassmen, 1 freshman proctor, 1 Boston College student, and 1 student from Hiram College, Ohio... Within the freshman class, the channels of diffusion were largely determined by proximity. Beginning with about 0.5 percent of the freshman class in the first wave, the information spread to about 8 percent of the freshman class.
The appeal of the method used above is that it does not assume \textit{a priori} categories of social structure, but allows such structures as are actually operative to be revealed through communicative processes. We have not applied this procedure to a society-wide process, but this remains an interesting prospect.

In the articles reprinted in this section, I have used communicative acts both as tools and as objects of sociopsychological inquiry.

Almost all of us have had the experience of encountering someone far from home who, to our surprise, turns out to share a mutual acquaintance with us. This kind of experience occurs with sufficient frequency so that our language even provides a cliché to be uttered at the appropriate moment of recognizing mutual acquaintances: We say, “My, it’s a small world.” “The Small World Problem” aims to elucidate this latent communication system, whose properties turn out to be interesting and more readily discerned through mathematical analysis than casual intuition.

What is the use of such a study? The criticism implied in this question has never bothered me, for any activity seems to me of value if it satisfies curiosity, stimulates ideas, and gives a new slant to our understanding of the social world. Nonetheless, I confess to being pleased when a medical investigator informed me that he found the small world method uniquely suited to his study of viral diffusion.

The use of a communication system as a tool is best illustrated in “The Lost Letter Technique.” One attractive feature of the technique is that it uses a very ordinary event—coming across a lost letter—as the basis of measurement. And it moves away from an exclusively verbal study of attitudes, which, because of its convenience, comes so easily to social psychologists and other survey scientists. Indeed, what it seemed to do was allow us to survey deeds and use this as a sociological datum. True, how a person disposes of a letter addressed to “Friends of the Nazi Party” is not a very large deed (perhaps we should call it a “microdeed”), but when aggregated with the responses of many other people and compared with an experimental control, it does tell us something about how people act toward such an organization, and even whether they are willing to help or hinder it by their acts.

Society has never worried more about the effects of messages than it has about the messages transmitted on television. The concern arises because of the sustained exposure to television by the country’s youth, and the high incidence of violent behavior depicted in this medium. Does viewing such violent behavior stimulate violence in the community? Social science could hardly formulate a question of greater significance for public policy. But the empirical question is not easily answered, as the excerpt from “Television and Antisocial Behavior” demonstrates.

Despite the negative character of the research findings, I am not yet willing to accept them as conclusive answers to the question of violence on television. Indeed, other investigators studying this issue have re-
ported effects of television on the commission of antisocial acts. But in truth, the quality of the investigations is not compelling. In principle, it seems that repeated and sustained exposure to violence ought to have an effect on individuals, but experimentation has thus far failed to demonstrate it.

The essay on photography attempts to explore the sociopsychological meaning of this “image freezing” medium. Since the analysis of photography is my current burning interest, let me say a little more about it. There is a special reason why photography deserves more attention by the psychologist than, say, the act of tying our shoelaces. Photography is a technology used to extend specifically psychological functions: perception and memory. It can thus teach us a good deal about how we see and how we remember. The challenge is to identify psychologically interesting components of photography and to deepen our understanding through analysis and experimentation.

Photography is not necessarily a social act. We may take pictures of inanimate objects and not even show the photographs to others. But most generally, the social context powerfully conditions our photographic behavior. This seems a useful working assumption. Photographic behavior, therefore, ought to be subject to sociopsychological analysis.

One may inquire, for example, into the effects of a camera’s presence on social behavior. One reasonable hypothesis is that prosocial behavior is encouraged and antisocial behavior is inhibited when people are aware that they are being photographed. To study this, one of my students, Maya Heezez, recently compared the size of contributions to a medical charity by individuals who are photographed and those who are not as they make their donations. She found that in the presence of the camera, people give substantially larger donations to a medical charity. She also found that antisocial behavior is inhibited: Substantially more automobiles stop at an intersection (bearing a stop sign) when a person is present at the intersection taking pictures than when the person is present without the camera.

The experiment touches on the deeper issue of the degree to which people feel accountable for their actions, and how this affects their behavior. At one extreme, a person may perform an act unobserved by others. But even behavior performed in the presence of others has a transitory quality. It is enacted, then disappears. The camera carries the documentation of the act beyond the situation in which it was carried out. It thus alters levels of anonymity, responsibility, and deindividuation. The camera is the “individuating” device par excellence, always recording a particular person or thing. The photograph, by permanently documenting the action, implies the polar opposite of anonymity and accordingly enhances social control.

A host of interesting questions may be raised about photography as a human activity: How can we describe the social relationship between the
photographer and the person photographed? What is the nature of the pose assumed by the person photographed? To what extent is the pose influenced by cultural factors? How does the nature of the photograph a person takes change from childhood to maturity? Who within the family takes photographs and who is photographed most often? What does this tell us about the inner emotional life of the family? To what extent does taking a photograph prevent a person from fully savoring the special qualities of the moment in exchange for a future record of it? When we photograph an event, do we necessarily become an impersonal spectator of it; does this diminish our ability to respond to the event in other ways? These questions chart experimental paths that remain to be explored.
The Small World Problem

The problem concerns the manner in which individuals are linked, through bonds of kinship and acquaintance, into complex networks, and the means of devising efficient paths connecting any two points within the network. For the sake of simplicity, let us call this "the small world problem," a phrase long current in our language, but first employed in the social sciences by Ithiel Pool (cited in Rand, 1964).

The simplest way of formulating the small world problem is: "Starting with any two people in the world, what is the probability that they will know one another?" A somewhat more complex formulation, however, takes account of the fact that while persons X and Z may not know each other directly, they may share a mutual acquaintance—that is, a person who knows both of them. One can then think of an acquaintance chain with X knowing Y and Y knowing Z. Moreover, one can imagine circumstances in which X is linked to Z not by a single link, but by a series of links, that is, X-a-b-c-d—y-Z. That is to say, person X knows person a who in turn knows person b, who knows c, . . . who knows y, who knows Z.

Therefore, another question one may ask is: given any two people in the world, person X and person Z, how many intermediate acquaintance links are needed before X and Z are connected? There are two general philosophical views on the small world problem. Some people feel that any two people in the world, no
matter how remote from each other, can be linked in terms of intermediate acquaintances, and that the number of such intermediate links is relatively small.

There is, however, a contrasting view that sees unbridgeable gaps between various groups. Given any two people in the world, they will never link up, because people have circles of acquaintances which will not necessarily intersect. A message will circulate in a particular cluster of acquaintances, but may never be able to make the jump to another cluster. This view sees the world in terms of isolated clusters of acquaintances. The earlier view sees acquaintances in terms of an infinitely intersecting arrangement that permits movement from any social grouping to another through a series of connecting links.

Concern with the small world problem is not new, nor is it limited to social psychologists like myself. Historians, political scientists, and even city planners have spoken of the matter in quite unambiguous terms. Jane Jacobs (1961), who has written on city planning, expressed it in terms that many of us have entertained as children.

When my sister and I first came to New York from a small city, we used to amuse ourselves with a game we called Messages. The idea was to pick two wildly dissimilar individuals—say a head hunter in the Solomon Islands and a cobbler in Rock Island, Illinois—and assume that one had to get a message to the other by word of mouth; then we would each silently figure out a plausible, or at least possible, chain of persons through which the message could go. The one who could make the shortest plausible chain of messengers won. The head hunter would speak to the head man of his village, who would speak to the trader who came to buy copra, who would speak to the Australian patrol officer when he came through, who would tell the man who was next slated to go to Melbourne on leave, etc. Down at the other end, the cobbler would hear from his priest, who got it from the mayor, who got it from a state senator, who got it from the governor, etc. We soon had these close-to-home messengers down to a routine for almost everybody we could conjure up (pp. 134–135).

The importance of the problem does not lie in these entertaining aspects, but in the fact that it brings under discussion a certain mathematical structure in society, a structure that often plays a part, whether recognized or not, in many discussions of history, sociology, and other disciplines. For example, Henri Pirenne (1925) and George Duby (1958) make the point that in the dark ages communication broke down between cities of western Europe. They became isolated and simply did not have contact with each other. The network of acquaintances of individuals became constricted. The disintegration of society was expressed in the growing isolation of communities, and the infrequent contact with those living outside a person’s immediate place of residence.
THE UNDERLYING STRUCTURE

Sometimes it is useful to visualize the abstract properties of a scientific problem before studying it in detail; that is, we construct a model of the main features of the phenomenon as we understand them. Graph theory, which is concerned with the mathematical treatment of networks, provides a convenient way of representing the structure of acquaintanceships. (Harary, Norman, and Cartwright, 1965)

Let us represent all the people in the United States by a number of points. Each point represents a person, while lines connecting two points show that the two persons are acquainted. Each person has a certain number of firsthand acquaintances, which we shall represent by the letters \( a, b, c, \ldots n \). Each acquaintance in turn has his own acquaintances, connected to still other points (see Figs. 19.1 and 19.2).

The exact number of lines radiating from any point depends on the size of a person’s circle of acquaintances. The entire structure takes on the form of a complex network of 200,000,000 points, with complicated connections between them. One way of restating the small world problem in these terms is this: given any two of these points chosen at random from this universe, through how many intermediate points would we pass before they could be connected by the shortest possible path?

There are many ways to go about the study of the small world

![Diagram](image)

**FIGURE 19.1**
Acquaintances of \( X, a, \ldots, n \).
problem, and I shall soon present my own approach to it. But first, let us consider the contributions of a group of workers at MIT under the leadership of Ithiel de Sola Pool. Pool, working closely with Manfred Kochen of IBM, decided to build a theoretical model of the small world, and the model parallels closely the idea of points and lines shown in Figs. 19.1 and 19.2. To build such a model certain information needs to be known. First, you have to know how many acquaintances the average man has. Surprisingly, though this is a basic question, no reliable answers could be found in the social science literature. So the information had to be obtained, and Dr. Michael Gurevitch, then a graduate student at MIT, set about this task. Gurevitch (1961) asked a variety of men and women to keep a record of all the persons they came in contact with in the course of 100 days. It turned out that on the average, these people recorded names of roughly 500 persons, so that this figure could be used as the basis of the theoretical model. If every person knows 500 other people, what are the chances that any two people will know each other? Making a set of rather simple assumptions, it turns out that there is only about one chance in 200,000 that any two Americans chosen at random will know each other. However, the odds drop precipitously when you ask the chances of their having a mutual acquaintance. And there is better than a 50–50 chance
that any two people can be linked up with two intermediate acquaintances.

Of course, the investigators were aware of the fact that even if a man has 500 acquaintances, there may be a lot of inbreeding. That is, many of the 500 friends of my friend may be actually among the people I know anyway, so that they do not really contribute to a widening net of acquaintances. Figure 19.3 illustrates the phenomenon of inbreeding by showing how the acquaintances of X feed back into his circle of acquaintances and do not bring any new contacts into the structure.

It is a fairly straightforward job to check up on the amount of inbreeding using one or two circles of acquaintances, but it becomes almost impossible when the acquaintance chain stretches far and wide. There are just too many people involved to make a count practical.

So the main obstacle in applying a model of this sort is the problem of social structure. Although poor people always have acquaintances, it probably turns out that they tend to be among other poor people, while the rich speak mostly to the rich. It is exceedingly difficult to assess the impact of social structure on a model of this sort. If you could think of the American population as only 200,000,000 points, each with 500 random connections, the model would work. But the contours of social structure make this a perilous assumption, for society is not built on random

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FIGURE 19.3
Inbreeding.
connections among persons, but tends toward fragmentation into social classes and cliques.

But could the problem admit of a more direct experimental solution? The Laboratory of Social Relations at Harvard gave me $680 to prove this was the case. My approach was to try to find an experimental method whereby if two persons were chosen at random, it would be possible to trace a line of acquaintances that linked the two.

Let us assume for the moment that the actual process of establishing the linkages between two persons runs only one way: from person A to person Z. Let us call person A the starting person, since he will initiate the process, and person B the target person. Then we would ask the starting person to try to establish contact with the target person using only a chain of friends and acquaintances. We could then see how long the chain was, and study many of its other properties. Of course, the starting person cannot, at the outset, know what the complete chain looks like: he cannot see beyond the circle of his immediate acquaintances, and the chance that anyone of his immediate acquaintances would know the target person is small. The starting person cannot see beyond the first link, he can only start the process on its way, by moving it one step toward the target.

The general procedure was to obtain a sample of men and women from varied walks of life. Each of these persons was given the name and address of “Target Person” (that is, an individual chosen at random living somewhere in the United States). Each of the participants was asked to move a message towards the target person using only a chain of friends and acquaintances. Each person could transmit the message to one friend or acquaintance who would be more likely to know the target person than he was. The friend would repeat the process until the message reached the target person. Messages may only move to persons who know each other on a first-name basis.

As a crude beginning, we thought it best to draw our starting people from some distant city such as Wichita, Kansas, or Omaha, Nebraska (from Cambridge, these cities seem vaguely “out there,” on the Great Plains or somewhere). So letters of solicitation were sent to residents in these cities asking them to participate in a study of social contact in American society. (For certain purposes, residents of the Boston area were also used.) It was necessary to select a target person and the first individual to serve in this capacity was the wife of a Divinity School student living in Cambridge. In a second study, carried out in collaboration with Jeffrey Travers, the target person was a stock broker who worked in Boston and lived in Sharon, Massachusetts. To keep matters straight, I will refer to the first study as the Kansas study and the second study as the Nebraska study. These terms indicate merely where the starting persons were drawn from. Each person who volunteered to serve as a starting person was sent a document, which is the main tool of the investigation (see Fig. 19.4). I suggest that it be scrutinized to learn the
flavor and details of the procedure, but let us quickly review its main contents. The document contains:

1. The name of the target person as well as certain information about him. This orients the participant toward a specific individual.

2. A set of rules for reaching the target person. Perhaps, the most important rule is stated in box 4; "if you do not know the target person on a personal basis, do not try to contact him directly. Instead, mail this folder . . . to a personal acquaintance who is more likely than you to know the target person . . . it must be someone you know on a first-name basis." This rule sets the document into motion, moving it from one participant to the next, until it is sent to someone who knows the target person. Then, rule 3 takes over and the chain is completed.

3. A roster on which the subject affixes his name. This tells the person who receives the letter exactly who sent it to him. The roster also has another practical effect; it prevents endless looping of the document through a participant who has already been an earlier link in the chain. For each participant can see exactly what sequence of persons has led up to his own participation.

4. A stack of fifteen business reply cards.

Several other features of the procedure need to be emphasized. First, the subject operates under the restriction that he can send the folder on only to one other person. Thus, the efficiency with which the chain is completed depends in part on the wisdom of his choice in this matter. Second, by means of the business reply card, we have continuous feedback on the progress of each chain. The cards are coded so we know which chain it comes from and which link in the chain has been completed. The card also provides us with relevant sociological characteristics of the sender and receiver of the card. Thus, we know the characteristics of completed, as well as incompletely, chains. Third, the procedure permits experimental variation at many points.

In short, the device possesses some of the features of a chain letter, though it does not pyramid in any way; moreover it is oriented toward a specific target, zeros in on the target through the cooperation of a sequence of participants, and contains a tracer that allows us to keep track of its progress at all times.

The question that plagued us most in undertaking this study was simply: Would the procedure work? Would any chains started in Kansas actually reach our target person in Massachusetts? The answer came fairly quickly. Within a few days after initiating chains in Kansas, one of the documents was returned to the target person, the wife of a Divinity School student. The document had started with a wheat farmer in Kansas. He
Communications Project
322 Emerson Hall, Harvard University, Cambridge, Massachusetts 02138

We need your help in an unusual scientific study carried out at Harvard University. We are studying the nature of social contact in American society. Could you, as an active American, contact another American citizen regardless of his walk of life? If the name of an American citizen were picked out of a hat, could you get to know that person using only your network of friends and acquaintances? Just how open is our "open society"? To answer these questions, which are very important to our research, we ask for your help.

You will notice that this letter has come to you from a friend. He has aided this study by sending this folder on to you. He hopes that you will aid the study by forwarding this folder to someone else. The name of the person who sent you this folder is listed on the Roster at the bottom of this sheet.

In the box to the right you will find the name and address of an American citizen who has agreed to serve as the "target person" in this study. The idea of the study is to transmit this folder to the target person using only a chain of friends and acquaintances.

**Target Person**

Information about
the target person
is placed here.

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**How to Take Part in This Study**

1. **Add Your Name to the Roster at the Bottom of This Sheet,** so that the next person who receives this letter will know who it came from.

2. **Detach One Postcard,** fill it out and return it to Harvard University. No stamp is needed. The postcard is very important. It allows us to keep track of the progress of the folder as it moves toward the target person.

3. **If You Know the Target Person on a Personal Basis,** mail this folder directly to him (her). Do this only if you have previously met the target person and know each other on a first-name basis.

4. **If You Do Not Know the Target Person on a Personal Basis,** do not try to contact him directly. Instead, mail this folder (postcards and all) to a personal acquaintance who is more likely than you to know the target person. You may send the folder on to a friend, relative, or acquaintance, but it must be someone you know on a first-name basis.
Remember, the aim is to move this folder toward the target person using only a chain of friends and acquaintances. On first thought you may feel you do not know anyone who is acquainted with the target person. This is natural, but at least you can start it moving in the right direction! Who among your acquaintances might conceivably move in the same social circles as the target person? The real challenge is to identify among your friends and acquaintances a person who can advance the folder toward the target person. It may take several steps beyond your friend to get to the target person, but what counts most is to start the folder on its way! The person who receives this folder will then repeat the process until the folder is received by the target person. May we ask you to begin?

Every person who participates in this study and returns the postcard to us will receive a certificate of appreciation from the Communications Project. All participants are entitled to a report describing the results of the study.

Please transmit this folder within 24 hours. Your help is greatly appreciated.

Sincerely,

Stanley Milgram, Ph.D.
Director, Communications Project

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**ROSTER**

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**PLEASE FILL IN THIS INFORMATION ABOUT YOURSELF**

My Name: [ ]

My Address: [ ]

My Occupation: [ ]

Age: [ ] Sex: [ ] Race: [ ]

Spouse's Occupation: [ ]

How many people do you know on a first name basis? Give us your best guess: [ ]

---

**Please fill in the following information about the person to whom you are sending the folder:**

His (Her) Name: [ ]

His (Her) Address: [ ]

His Occupation: [ ]

Age: [ ] Sex: [ ] Race: [ ]

Nature of His Relationship to you (Please explain whether he is a friend, acquaintance, relative, etc.): [ ]

Why did you select him to receive the passback? [ ]

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**FIGURE 19.4**

Document used in the small world problem.
passed it on to an Episcopal minister in his home town, who sent it to a minister who taught in Cambridge, who gave it to the target person. Altogether the number of intermediate links between starting person and target person amounted to *two*!

As it turned out this was one of the shortest chains we were ever to receive, for as more tracers and documents came in, we learned that chains varied from 3–10 intermediate acquaintances, with the median at 5.5. Figure 19.5 shows what may be regarded as the main finding of the study; the distribution of 42 chain lengths from our Nebraska study, in which 160 persons started in an attempt to reach a stock broker who resided in Sharon, Massachusetts. The median number of intermediate persons is 5.5, which is, in certain ways, impressive, considering the distances traversed. Recently, I asked a person of intelligence how many steps he thought it would take, and he said it would require 100 intermediate persons, or more, to move from Nebraska to Sharon. Many people make somewhat similar approximations, and are surprised to learn that only 5.5 intermediaries will—on the average—suffice. Somehow it does not accord with intuition. Later, I shall try to explain the basis of the discrepancy between intuition and fact.

It is reasonable to assume that the theoretically pure number of links needed to complete the chains is even less than that shown by our findings. First, since our participants can only send the folder on to one of their 500 possible contacts, it is unlikely that even through careful selection they will necessarily, and at all times, select a contact best able to

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**FIGURE 19.5**
Number of intermediaries needed to reach target person. Each chain started in Nebraska and reached a target person in Massachusetts.
advance the chain to the target. On the whole they probably make pretty
good guesses, but surely, from time to time, they overlook certain
possibilities for shortcuts. The chains obtained in our empirical study are
less efficient than those generated theoretically.

Secondly, the only basis for moving the folder to the target person is
to work along certain highly rational lines. That is, a certain amount of
information about the target person concerning his place of employment,
place of residence, schooling, etc., is given to the starting subject, and it is
on the basis of this information alone that he selects the next recipient of
the folder. Yet, in real life, we sometimes know a person because we
chance to meet him on an ocean liner, or we spend a summer in camp
together as teenagers, yet these haphazard bases of acquaintance
ship cannot be fully exploited by the participants.

There is one factor that could, conceivably, work in the opposite
direction, that is, give us the illusion that the chains are shorter than they
really are. There is a certain decay in the number of active chains over each
remove even when they do not drop out because of reaching the target
person. Of 160 chains that started in Nebraska, 42 were completed and 128
dropped out. These chains die before completion because a certain
proportion of participants simply do not cooperate and fail to send on the
folder on each remove. Thus, the results we obtained on the distribution
of chain lengths occurred within the general drift of a decay curve. It is
possible that some of the uncompleted chains would have been longer
than those that did get completed. To account for this possibility, Profes-
sor Harrison White of Harvard has constructed a mathematical model to
show what the distribution of chain lengths would look like if all chains
went through to completion. In terms of this model there is a transforma-
tion of the data, yielding longer chains.

EXAMINING THE CHAINS

There are several features of the chain worth examining, for they tell us
something about the pattern of contact in American society. Consider, for
example, the very pronounced tendency in our Kansas study for female
participants to send the folder on to females, while males tended to send
the folder on to other males. For a total of 145 subjects involved in the
study, we find:

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that is, subjects were three times as likely to send the folder on to someone
of the same sex as someone of the opposite sex. This is true when the
target person is female, less true when the target person is a male. Exactly
why this is so is not easy to determine, but it suggests that certain kinds of
communication are conditioned strongly by sex roles.

Subjects also indicated on the tracer cards whether they were sending
the folder on to friends, relatives, or acquaintances. In this same series, 123
cards were sent to friends and acquaintances, while only 22 were sent to
relatives. Cross-cultural comparison would seem useful here. It is quite
likely that in societies which possess extended kinship systems, relatives
will be more heavily represented in the communication network than is
true in the United States. In American society, where extended kinship
links are not maintained, acquaintance and friendship links provide the
preponderant basis for reaching the target person. I would guess, further,
within certain ethnic groups in the United States, a higher proportion of
familial links would be found in the data. Probably, if the study were
limited to persons of Italian extraction, one would get a higher proportion
of relatives in the chain. This illustrates, I hope, how the small world
technique may usefully illuminate varied aspects of social structure, as
well as cultural topics.

In Fig. 19.6 we show what kind of people were involved in some
typical chains that stretched from Nebraska to Massachusetts.

Each of us is embedded in a potential small world structure. It is not
enough to say, however, that each acquaintance constitutes an equally
important basis of contact with the larger social world. For it is obvious
that some acquaintances are more important in establishing contacts with
broader social realms: some friends are relatively isolated; others possess
a wide circle of acquaintances, and contact with them brings the individual
into a far-ranging network of additional persons.

Let us consider in detail the pattern of convergence crystallizing
around the target person of our second target person, a stock broker living
in Sharon, Massachusetts, and working in Boston. A total of 62 chains
reached him; 24 of these at his place of residence in a small town outside
of Boston. Within Sharon, fully sixteen were given to the target person by
Mr. Jacobs, a clothing merchant in town. He served as the principal point
of mediation between the target person and the larger world, a fact that
came as a considerable surprise, and even something of a shock for the
target person. At his place of work in a Boston brokerage house, ten of the
chains passed through Mr. Jones, and five through Mr. Brown, business
colleagues of the target person. Indeed, 48 percent of the chains to reach
the target person were moved on to him by three persons: Jacobs, Jones,
and Brown. Between Jacobs and Jones there is an interesting division of
labor. Jacobs mediates the chains advancing to the target person by virtue
of his residence. Jones performs a similar function in the occupational
domain, and moves 10 chains enmeshed in the investment-brokerage
network to the target person (Fig. 19.7).
More detail thus comes to fill out the picture of the small world. First, we learn that the target is not surrounded by acquaintance points each equally likely to feed into an outside contact; rather, there appear to be highly popular channels for the transmission of the chain. Second, there is differentiation among these commonly used channels, so that certain of them provide the chief points of transmission in regard to residential contact, while others have specialized contact possibilities in the occupational domain. For each possible realm of activity in which the target is active, there is likely to emerge a sociometric star with specialized contact possibilities.
FIGURE 19.7
Convergence through common channels (includes 42 chains that started in Nebraska and 22 that started in the Boston area).

**GEOGRAPHIC MOVEMENT**

Geographic movement from the state of Nebraska to Massachusetts is striking over the several links. Figure 19.8 shows the progressive closing in on the target area with each new person added to the chain. There are some cases, however, in which a chain moves all the way from Nebraska to the very neighborhood in which the target person resides, but never quite makes the necessary contact to complete the chain. Some chains have died only a few hundred feet from the target person's house, after a successful transmission of 1000 miles. Social communication is sometimes restricted less by physical distance than by social distance.

The major research focus for future inquiry calls for changing the relationship between the starting person and the target person. If the two are drawn from different class backgrounds, does this decrease the probability of completing the chain? Does it increase the number of links?

In collaboration with Charles Korte, I am now applying the small world method to the study of communications in subgroups in American society; namely, Negro and white persons. We will have Negro starting
persons and target persons, and white starting persons, and try to trace the lines of communication between them. We would first like to ask: In what degree are the racial lines surmounted? Can any sizable fraction of the communications get through the racial barrier? If the answer is affirmative, what is the typical locus of transition? Does it occur at the neighborhood level? At the place of work? We are particularly interested in the persons who serve as links between Negro and white groups. In what way do they differ from others in the chain? Do they tend to occupy particular professional categories, such as minister, teacher, etc.? Is there any easier flow between Negroes and whites in Northern or Southern locales? Perhaps some new light can be cast on the structural relationships, between Negro and white communities by probing with the small world method.

As stated previously, many people were surprised to learn that only 5.5 intermediaries will, on the average, suffice to link randomly chosen individuals, no matter where each lives in the United States. We ought to try to explain the discrepancy between intuition and fact.

The first point to remember is that although we deal directly with only 5.5 intermediaries, behind each of them stands a much larger group of from 500 to 2500 persons. That is, each participant selects from an acquaintance pool of 500 to 2500 persons the individual he thinks is in the best position to advance the chain, and we deal only with the end product of a radical screening procedure. Second, there is an element of geometric progression implicit in the search procedure, and there is nothing more alien to mathematically untutored intuition than this form of thinking. As youngsters, any of us were asked the question: If you earned a penny a day and the sum were doubled each day, how much would you have earned by the end of a 30-day working period. Most frequently people give answers on the order of $1.87 or $6.45, when in fact the sum is more
than $10,000,000 for one 30-day working period, the last day alone
yielding $5,368,709.12 in wages. Elements of geometric progression with
an increase rate far more powerful than mere doubling underlies the small
world search procedure, and thus, with only a few removes, the search
extends to an enormous number of persons.

Finally, when we state there are only 5.5 intermediate acquaintances,
this connotes a closeness between the position of the starting person and
the target persons, but this is in large measure misleading, a confusion of
two entirely different frames of reference. If two persons are 5.5 removes
apart, they are far apart indeed. Almost anyone in the United States is but
a few removes from the President, or from Nelson Rockefeller, but this is
only as seen from a particular mathematical slant and does not, in any
practical sense, integrate our lives with that of Nelson Rockefeller. Thus,
when we speak of five intermediaries we are talking about an enormous
psychological distance between the starting and target points, a distance
which only seems small because we customarily regard "5" as a small,
manageable quantity. We should think of the two points as being not five
persons apart, but five "circles of acquaintances" apart—five "structures"
apart. This helps to set it in its proper perspective.

There is an interesting theorem based on the model of the small
world. It states that if persons from two different populations cannot
make contact, that no one within the entire population in which each is
embedded can make contact with any person in the other population. Said
differently, given person \( a \) embedded in population \( A \) (which consists of
his circle of acquaintances), and person \( b \) embedded in population \( B \), if \( a 
\) cannot make contact with \( b \), then:

1. No other individual in \( A \) can make contact with \( b \).
2. No other individual in \( A \) can make contact with any other
   individual in \( B \).
3. In other words, the two subpopulations are completely isolated
   from each other.

Conceivably, this could happen if one of the populations were on an
island never visited by the outside world. In principle, any person in the
United States can be contacted by any other in relatively few steps, unless
one of them is a complete and total hermit and then he could not be
contacted at all.

In sum, perhaps the most important accomplishment of the research
described here is that—although people have talked about small world
connections, and have even theorized about it—these are, to my knowl-
dge, the first empirically created connections between persons chosen at
random from a major national population.

Although the study started with a specific set of questions arising
from the small world problem, the procedure illuminates a far wider set of topics. It reveals a potential communication structure whose characteristics have yet to be exposed. When we understand the structure of this potential communication net, we shall understand a good deal more about the integration of society in general. While many studies in social science show how the individual is alienated and cut off from the rest of society, from the perspective of this study a different view emerges: in some sense, at least, we are all bound together in a tightly knit social fabric.

NOTE

1. This includes the 42 originating in Nebraska and 20 additional chains originating in the Boston area.

REFERENCES


Pool, I. D. S., Unpublished memorandum, Massachusetts Institute of Technology.
