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STRUCTURAL BALANCE, MECHANICAL SOLIDARITY, AND INTERPERSONAL RELATIONS

JAMES A. DAVIS

ABSTRACT

Balance theory, a theoretical system developed by Cartwright and Harary to formalize concepts set forth by Heider, is used with slight modifications to restate fifty-six sociological and social-psychological propositions from the writings of Berelson, Lazarsfeld, and McPhee; Coleman; Davis; Durkheim; Feshinger; Fiedler; Homans; Katz and Lazarsfeld; Lazarsfeld and Merton; Lipset, Trow, and Coleman; Merton and Kitt; and Stouffer *et al.* The propositions are grouped under (a) *Person, Other, and X*, (b) group structure, (c) changes in attitudes and opinions, and (d) values.

Almost seventy-five years ago Durkheim wrote: "Social life comes from a double source, the likenesses of consciences and the division of social labor" (5, p. 226). Less than a year ago, George Caspar Homans wrote:

The first and most obvious thing to be said (about conformity) is that if members of a group are to resemble one another in their behavior, some of them must find this similarity valuable or rewarding. Similarity is not always rewarding. . . . The division of labor means differences in labor, and it often pays off. But we are now dealing with the case in which similarities rather than differences are valuable [11, pp. 114-15].

The powerful effects of similarity and difference between people as explanatory principles in analyzing human behavior have not, of course, gone unnoticed in the interim. Of the two, however, similarity has received more attention, and it is the burden of this paper that the point has been reached where it is possible to spell out a theory of similarity (what Durkheim would call mechanical solidarity) that organizes a number of principles and hypotheses in recent research.

In particular, the ideas presented here are culled from five clusters of authors and studies: (a) a group of social psychologists mostly influenced by Gestalt thinking in general and Kurt Lewin in particular (2, 6-9); (b) George Homans' two theoretical books (10, 11); (c) a series of studies by

sociologists associated with Columbia University and the Bureau of Applied Social Research (1, 3, 12, 13, 15); (d) the theory of relative deprivation (4, 16, 17); and (e) Durkheim (5).

In order to avoid the appearance of acute megalomania it must be made clear what this essay is and what it is not. On one hand, the author makes no claim of originality or profundity, his belief being that almost all the conclusions either can be found in the works cited or are familiar principles of human behavior. On the other hand, there is no claim that the proposed theory subsumes, integrates, or codifies any or all of these works. Running through the writings mentioned above are a number of concepts and propositions that can be restated (with some inevitable distortion) in a common language and in terms of a small number of postulates. Some of these concepts and propositions are: structural balance (2, 9), magnitude of dissonance (6), abilities and opinions (7), liking and cognitive unit formation (2, 9), sentiments (10, 11), constraint versus warm friendly relations (10), pressures toward uniformity (6), social comparisons (7), distributive justice (11), subgroup formation (4), relative deprivation (4, 16, 17), choice of reference group (16), assumed similarity (8), cross-presures (1), polarization of social opinions (3), attachments (10), the effects of shop size on social relations (15), friendship

(10, 13), self-selected and involuntary social relations (15), mechanical solidarity (5), "homophily" and "heterophily" (13).

The remainder of this paper is an exposition of the theory organized as follows: (a) discussion of the formal language and concepts, (b) major postulates, (c) derived propositions about interpersonal relations, (d) derived propositions about group structure, (e) derived propositions about attitudes and values.

This essay should be considered as an attempt at deductive theoretical analysis, not as a review of the literature.

THE THEORY

The theory submitted here consists of three parts: (a) a formal apparatus combining graph theory and elementary algebra, (b) an interpretation of the formal concepts in terms of social psychological concepts, and (c) a set of postulates that provide the basic propositions. With some slight modifications, the theory is that developed by Cartwright and Harary (2).

THE P-O-X EQUATION

The formal apparatus of the theory can be expressed in eight definitions:

- Def. 1. A linear graph, or briefly, a *graph*, consists of a finite collection of *points*, A, B, C, \dots , together with all unordered pairs of distinct points. Each of these pairs (e.g., AB) is called a *line*.
- Def. 2. Lines may vary in *type* (or "kind" of relationship) and *sign* (plus or minus) or *numerical value*.
- Def. 3. The *net value* of a line of two or more types is the sum of the values for each type.
- Def. 4. A *path* is a collection of lines of the form AB, BC, \dots, DE , where the points A, B, C, D , and E are distinct.
- Def. 5. A *cycle* consists of the above path together with the line EA .
- Def. 6. The *value of a cycle* is the product of the net values of its lines.
- Def. 7. A cycle with a positive value is *balanced*, a cycle with a negative value is *unbalanced*.
- Def. 8. The *net value of a graph at point P* is

the sum of the values of the cycles in which P is a point.

Definitions 1, 2, 4, 5, 6, and 7 are taken almost literally from Cartwright and Harary.¹

The only important difference in our theory is the addition of definitions 3 and 8, which concern multiple types of lines and/or multiple cycles. The assumption is that each is a sum (not a product) and that net values of lines are to be "calculated" prior to the calculation of the values of the cycle. Thus, different cycles must include different points.

So far, the apparatus presented is devoid of any content, and the definitions given could apply to people, switching circuits, messages, kinship relations, etc. Again following Cartwright and Harary, together with Heider (2, 9), let us provide interpretations for points.

- Def. 9. *Person (P)* is the individual whose behavior is predicted by the theory, the point whose net value is being considered.
- Def. 10. *Other (O)* is some additional individual.
- Def. 11. X is some value or social object, sometimes a third individual.

Thus, in the analysis of voting, P might be a particular voter, O might be Person's best friend, and X might be a candidate or political party.

Our interpretations of lines are as follows:

- Def. 12. *Liking*:
This refers to a person's evaluation of something, as when Person likes or admires, approves, rejects, or condemns [adapted from 9, p. 200].
- Def. 13. *Unit Formation*:
"In addition, there is a unit relation . . . the parts of such units are perceived as belonging together in a specially close way. But also two (or

¹The reader who is unfamiliar with the theory will find a very clear exposition in their article, which is reprinted in Dorwin Cartwright and Alvin Zander, *Group Dynamics* (2d ed.; Evanston, Ill.: Row, Peterson & Co., 1960).

more) separate entities can form a unit. The two entities may be related through similarity, causality, ownership, or other unit-forming characteristics" [9, pp. 200-201].²

In order to shift from a language to a theory it is necessary to state the fundamental propositions or postulates from which the specific inferences or hypotheses of the theory will be drawn.

POSTULATE I: People prefer positive net values.

- a) If possible, people will act to shift the net value of their cycles from negative to positive or from a positive to a greater positive value.
- b) Low values are associated with feelings of distress, tension, discomfort, etc. The lower the value, the greater the distress (or dissonance).

POSTULATE II: Liking has a positive value; its opposite, disliking, has a negative value; indifference has a value of zero.

POSTULATE III: Unit formation has a positive value; its opposite, the segregation relationship, has a negative value.

Although put in our words, these too are quite close to the basic assumptions in Heider and Cartwright and Harary. The idea also has a partial overlap with Festinger's concept of dissonance (6), although Festinger's concept is more general. We will use "unbalanced" and "dissonant" as synonyms in our exposition, although there is more to dissonance than sheer structural unbalance.

Although the postulates are designed to place some social psychological flesh on the formal bones of the theory, the principles are rather abstract. The following example may serve to illustrate the theory in concrete terms.

One of the better known case studies in

² Definitions 12 and 13 are taken directly from Heider (9).

the marriage and family literature involves the structural imbalance incurred by two Veronese adolescents, Juliet Capulet and Romeo Montague. Although their families are bitter enemies, the two fall in love, and in Act II, Scene 2, Juliet muses, "O Romeo, Romeo! wherefore art thou Romeo? . . . 'Tis but thy name that is my enemy" . . . etc.

Although the situation perhaps loses some literary value in translation into balance theory, it will serve to illustrate the definitions and postulates outlined above.

The *points* are: *Person* (Juliet), *Other* (Romeo), and *X* (the Montague name).

The *lines, types, and signs* are: *Person-Other* (liking, positive to say the least);

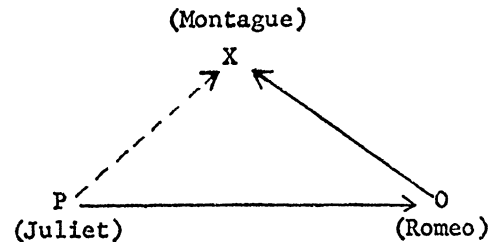


FIG. 1.—The P-O-X cycle

Other-X (unit formation, positive . . . i.e., Romeo is strongly associated with his family name); and *Person-X* (liking, negative . . . Juliet hates Montagues).

The *cycle* consists of the three lines connected as shown in Figure 1 (following the convention that positive lines are solid, negative lines dotted).

The *value* of the cycle is *negative* and the cycle is *unbalanced* (a positive times a positive times a negative value gives a negative product).

Juliet is distressed because she would prefer a positive value (Postulate I) and she acts to increase the value of the cycle (Postulate Ia) by shifting the *O-X* line toward the negative, that is, by dissociating Romeo from his name. If successful this would make the cycle positive (and ruin the play).

LIKING AND SIMILARITY IN
SOCIOLOGICAL THEORIES

While graph theory has not been used much by sociological theorists, a case can be made that the ideas of the theory have been widely accepted in sociology in other formulations.

Clearly the Cartwright-Harary-Heider concept of "liking" has an immediate transfer to sociological theories, a number of which say in other words that if P likes O he will tend to prefer or develop relationships with X similar to O 's relationship to X .

Homans' concept of "sentiments" in *The Human Group* is practically identical with liking, and we shall see later that his analysis of the relationships among three persons (10, pp. 248-52) is straightforward balance theory, given that "warm friendly relations" are the equivalent of liking, and "constraint" is construed as "disliking."

A number of attitude and opinion theorists associated with Columbia University and the Bureau of Applied Social Research have come at the same idea from the opposite direction—the effect of identical attitudes toward X on P 's liking for O .

Coleman writes: "As in an argument between friends, a discussion which begins with disagreement on a point in question often ends with each disliking the other. . . . Conversely, a relationship which begins with two people agreeing in tastes and interests often ends with both liking one another" (3, pp. 10-11).

The authors of *Union Democracy* draw a similar inference: "the less likely he [a worker] is to find people who share his salient values and attitudes . . . the less likely are those relations to develop into close and intimate friendships" (15, p. 157).

One of the most explicit developments of this idea is in Lazarsfeld's and Merton's paper, "Friendship as a Social Process" (13), with its concepts of "homophily" and "heterophily."

While the implicit or explicit acceptance of liking as a factor in PO bonds is almost universal among sociologists, less attention has been given to sociological equivalents of the unit relationship. Heider himself treats it as a very broad category, including any psychological or reality factor that leads to the perception of grouping or segregating certain elements into a figure against the ground of all remaining elements.

When we come to ask what sorts of things should lead P to see himself and *Other* grouped together perceptually, at first glance the possibilities seem endless—membership in the same group, high rates of interaction, identification, etc. While all of these undoubtedly are important, our theory will consider only one factor similarity.

Def. 14. Considering P and one or more *Others*, and a set of social attributes including X , the *similarity* between P and O (symbolized by r_{PO}) is the correlation between P and O over all the attributes other than X .

That is, the similarity between P and O is defined as the correlation between P and O in terms of social attributes other than X .

In more eloquent, but less operational, language this is what Durkheim presumably meant by his concept of envelopment by the collective conscience, which amounts to a correlation between people in terms of social characteristics. The greater the correlation, Durkheim might say, the stronger the collective conscience and the greater the mechanical solidarity. "Solidarity which comes from likeness is at its maximum when the collective conscience completely envelops our whole conscience and coincides at all points with it. But at that moment, our individuality is nil" (5, p. 130).

A more recent, but similar, line of argument for the claim that similarity leads to positive PO bonds comes from writers who have analyzed social comparisons.

Let us begin with the "theory of relative deprivation" (4, 16, 17). The theory originally appeared in the empirical research of *The American Soldier* series, was codified by Merton and Kitt, and has recently been translated into a formal system using the calculus of probabilities (4). The general idea is that men evaluate their own lot by comparison with others. The knotty theoretical question, of course, is "what others?" The authors of *The American Soldier* do not treat the problem directly; in fact, as Merton and Kitt note, they do not even define relative deprivation. Merton and Kitt note three formal possibilities: persons "with whom they were in actual association," persons "of the same status or in the same social category," and persons "who are in some pertinent respect of different status or in a different social category," but they do not opt for one of these to the exclusion of the rest, saying:

This suggests the general hypothesis that some similarity in status attributes between the individual and the reference group must be perceived or imagined, in order for the comparison to occur at all. Once this minimal similarity obtains, other similarities and differences pertinent to the situation will provide the context for shaping evaluations (16, p. 61).

The clearest stand for the similarity hypothesis is taken by Homans in his discussion of "distributive justice" (11). Although in his formal theory the idea is developed from the concept of "investments" and the claim that personal attributes are investments, Homans clearly favors the similarity hypothesis: "the heart of these situations is a comparison. . . . In effect Person asks himself: 'Am I getting as much as other men in some respect like me would get in circumstances in some respect like mine?'" (11, p. 76).

From this we believe it is only a short step to the more general proposition that to the degree that *Person* and *Other* are similar in their general social attributes, *Person* will prefer that their liking or unit

relationships regarding a specific attribute be similar (i.e., balanced).

A slightly different position, however, is taken by the writer who has been most explicit on the subject. In Festinger's theory of social comparison processes, he states:

Hypothesis III: The tendency to compare oneself with some other specific person decreases as the difference between his opinion or ability and one's own increases [7, p. 120].

At first glance, it appears that Festinger, too, seems to favor the "similarity hypothesis," but a close reading raises some problems. In our terms, his hypothesis read literally is that *P* only compares with *O* if they are relatively or absolutely identical in terms of *X*. If so, it would be circular to argue that the relationship between *P* and *O* affects *P*'s relationship with *X* if it is also hypothesized that the relationship between *P* and *O* is determined by their relationship with *X*. Logically the outcome—the prediction of a tendency toward balance—could be derived from this hypothesis, but the formulation presents these technical difficulties.

From here on we shall limit our consideration of unit formation to the single factor of objective similarity, although definition 13 is broader than that.

Having reviewed the formal definitions and postulates and having seen that a number of sociological and social psychological writings can be interpreted as accepting these principles, we are now ready to proceed to draw a number of inferences about various forms of social behavior. It should be stressed, however, that we are not proposing a general theory of interpersonal relationships, but rather a number of "other things equal" propositions. In particular, the theory ignores three classes of variables that undoubtedly should be in any general theory.

First, the theory ignores differentiation and the effects of a division of labor—Durkheim's organic solidarity and Homans' exchange process. The benefits that accrue to *Person* from exchange and divi-

sion of labor are precisely the forces that serve to compensate for or offset tendencies toward balance. We do not believe that the two ideas are contradictory, however. Rather, we believe that it requires some exchange profit to reward *Person* so that he will enter unbalanced situations. Thus, while the essential postulate of balance theory is "Birds of a feather flock together," the essential postulate of exchange theory is "Politics makes strange bedfellows," which are not contradictory if politics is construed as meaning "some mutual benefit."

Second, a general theory of interpersonal relations should include social interaction as a variable. Interaction can be conceived as a third kind of graph variable, and indeed some of Homans' propositions in *The Human Group* can be restated in terms of balance theory assuming that interaction has the status of liking or unit formation. On the other hand, a case can be made that interaction is not a variable at all but a factor intensifying the effects of other variables. This is, in effect, one of the major theoretical shifts in Homans' work between *The Human Group* and *Social Behavior*. Unfortunately, we have not been able to work out a formalization of the role of interaction that does not lead to one or more bizarre theorems and, hence, will ignore variations in interaction.

Third, we shall assume that *P* is unlikely to grossly misperceive *O*'s situation. While there is a large research literature indicating that people can and do maximize balance by distorting or misperceiving others' likes and dislikes, we shall consider only situations of such degree of contact that misperception is, except momentarily, excluded as a solution to the problem of achieving balance. Thus, while it is possible for people to kid themselves about the stands of distant political figures, or transient experimental groups, we shall assume that over the long haul people cannot kid themselves much about their wives, friends, and colleagues.

INFERENCES FROM THE THEORY

The inferences are divided into four groups: (a) propositions about *Person*, *Other*, and *X*; (b) propositions about group structure; (c) propositions about changes in attitudes and opinions; (d) propositions about values. Derivations will be numbered and indicated by a capital D (e.g., D1, D2 . . .).

PERSON, OTHER, AND X

D1. The more similar *Person* is to *Other*, the more *Person* will like *Other*.

This proposition, which has been treated perceptually by Fiedler (8) is based on the following reasoning. We have considered *P* and *O* in terms of a set of attributes, one of which is *X*. The selection of *X* being arbitrary, each of the attributes can be an element in a balance cycle involving *P* and *O*. Now the more similar *P* and *O* are in terms of characteristics, the greater the proportion of the cycles with a positive (*PX*) (*OX*) product. If, in turn, the (*PX*) (*OX*) product is positive, a positive value for (*PO*) will raise the value of the cycle and thus add to net value. Because liking adds to the positive value of (*PO*), it follows that similarity leads to liking.

For simplicity, we shall refer to people who are more similar than different, as peers.

Def. 15. *Person* and *Other* are peers if r_{PO} is positive.

D2. The value of *P*'s liking for *O* tends to be the same as the value of *O*'s liking for *P* (i.e., liking tends to be symmetrical).

Because the correlation r_{PO} is symmetrical, its value is the same for *P* and *O*. Hence, if D1 is true for *P* it is true for *O*, and their degrees of liking should be similar. It should be noted that the theory does not state that similarity is a necessary condition for liking, merely a sufficient one. Liking based on "exchange" is not, as noted above, within the purview of the theory.

While it may be elaborating the obvious, we shall have use of the following definition:

Def. 16. If P likes O and O likes P , P and O are friends.

D3. Friends tend to become similar in activities.

D4. Friends tend to become similar in attitudes.

Derivations 3 and 4 are, of course, the obverse of D1, with activities interpreted as unit formation regarding X and attitudes as liking regarding X . However, some attributes are changeable (habits, tastes, hobbies, etc.) while some (sex, intelligence, age, etc.) are unmodifiable even under pressures to maximize balance. Just as a positive (OX) (PX) value is congruent with liking, liking makes the (PO) bond more positive and is hence congruent with increased similarity in X , if X is subject to voluntary change.

D5. If P and O are friends but differ in their degree of liking, the one with the greater degree of liking will imitate the one with the lesser, rather than vice versa.

Although liking tends toward symmetry, it need not be completely so. If there is a discrepancy, the individual with the greater liking has the greater (PO) value, and the greater pressure to seek similarity vis-à-vis X , an idea somewhat like Willard Waller's "Principle of Least Interest."

Having stated the basic derivations regarding P , O , and X , we can begin to treat somewhat more complicated situations involving more than two people, first considering the situation where X is a person and then the situation where there are two *Others* and a single X .

In *The Human Group* Homans develops the proposition, "the relationship between two persons A and B is partly determined by the relationships between A and a third person C, and between B and C" (10, pp. 248-61). If his statements regarding interaction are deleted, the same conclusions can be drawn from balance theory. Thus, rephrasing the proposition on his page 251:

D6. If the relationships between *Person* and *Other* and between *Other* and X (where X is a third individual) are both marked by dislike, the relationship between *Person* and X may be friendly.

By ringing the changes on this formulation, we may add the following:

D7. If *Person* likes *Other* and *Other* dislikes X , *Person* will tend to dislike X .

D8. If *Person* likes *Other* and *Other* likes X , *Person* will tend to like X .

D9. If *Person* dislikes *Other* and *Other* likes X , *Person* will tend to dislike X .

Having considered liking among three people, let us elaborate the situation further by considering three people and X .

One of the most famous ideas in communications research is that of "cross-pressures." Like many important ideas in this area it is hard to spell out formally, but a reasonable definition appears in *Voting*:

As we have seen, family and friendship formation and social discussion generally take place among people who are *alike* socially in the politically relevant respects (e.g., class and religion). But not always. When memberships in two strata overlap, small group formations and social discussions spread among people alike in some respects but not in other important ways [1, p. 128].

Berelson *et al.* draw the following conclusions about the consequences of such situations:

An individual who is characterized by any type of cross-pressure is likely to change his mind in the course of the campaign, to make up his mind late, and occasionally, to leave the field and not to vote at all [1, p. 284].

The translation of this into our terms is given by Figure 2, where solid lines indicate positive values and dotted lines, negative values.

To the extent that *Person* has a positive bond to *Other*₁ and also to *Other*₂ (where the *Others* may be social groups) it becomes increasingly difficult for him to adopt a stable attitude toward X . If, for instance, he likes X , the value of the (P)(O_1)(X)

triangle becomes positive, but the value of the $(P)(O_2)(X)$ triangle becomes negative. The general proposition is as follows:

D10. To the extent that *Person* has equal positive ties to two *Others* who have equal and opposite degrees of liking for *X*, the net value of any attitude toward *X* approaches zero for *Person*.

In order to avoid reifying groups, a fuller analysis could be developed using individuals. Thus, the lines in Figure 2 may be thought of as the average of the values of the personal relationships between *Person* and group members, and group members and *X*.

Working out some of the possibilities in detail gives the following propositions:

D11. The greater the cross-pressuring for *Person* (i.e., the more equal the opposite values), the weaker his attitude (liking) toward *X*.

D12. If *Person* does adopt a positive or negative attitude toward *X* it will be the attitude of the *Other* with the strongest degree of liking or disliking toward *X*, provided that *Person's* bonds to the two groups are equal.

D13. If *Person* does adopt a positive or negative attitude toward *X*, it will be that of the *Other* to whom he has the stronger positive tie (liking or similarity) providing that the strengths of the *Others'* attitudes toward *X* are equal.

D14. If *Person* does adopt an attitude toward *X*, he will tend to lower his liking for the *Other* with whom he is now in imbalance and increase his liking of the *Other* with whom he is now in balance.

GROUP STRUCTURE

Having stated the basic derivations from the theory in terms of *Person*, *Other*, and *X*, we can now proceed to a different level of analysis, the statistical properties of groups. That is, instead of considering a particular $(P)(O)(X)$ triangle, we shall treat the properties of the distributions of triangles in groups which vary in the distribution of particular variables.

In doing so, we shall make two assumptions of statistical and substantive impor-

tance. First, it is assumed that the group is large enough so that the distribution for the entire group approximates the distribution of *Others* for each particular *Person*. In a group of thirty, which is split fifty-fifty in political preference, if *Person* is a Democrat, 52 per cent of the *Others* are Republicans, which is pretty close to 50 per cent. In a group of two, however, split fifty-fifty in political preference, 100 per cent of the *Others* are of the opposite political persuasion.

Second, we shall assume that the communication in the group is such that each member receives an essentially similar and

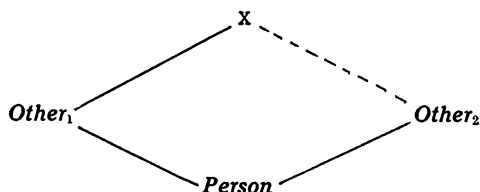


FIG. 2.—The cross-pressure situation

accurate perception of the characteristics of the group as a whole.

It is probably true that these two assumptions are antithetical, the larger the group the less adequate the communication and the smaller the group the more distortion introduced by subtracting *Person* from the distribution of *Others*. Nevertheless, it would appear fair to say that the assumptions, while extremely useful in facilitating the deductions, affect only the degree of precision, not the essentials of the predictions.

It is a persistent observation in field studies of human behavior that in groups of moderate size there is a tendency for subgroups or cliques to form.

Def. 17. A subset of group members whose average liking for each other is greater than their average liking for the other members is a *clique*.

The development of cliques has been analyzed in some detail by Homans (10), Lazarsfeld and Merton (13) and Lipset *et al.* (15). Homans emphasizes the im-

portance of differential rates of interaction in clique formation, a major theme of *The Human Group* being that differentials in social interaction determined by work (the external system) lead to differentials in liking, other sentiments, and activities so that "the activities of a sub-group may become increasingly differentiated from those of other sub-groups up to some limit imposed by the controls of the larger group to which all the sub-groups belong" (10, p. 136). Our impression is that the research literature over a variety of studies tends to support the claim that in day-to-day social life, differences in rates of interaction are the major factor behind subgroup formation. Our theoretical analysis, however, is assuming that interaction rates are uniform within a group, and hence we may proceed to consider other variables. For groups with undifferentiated patterns of interaction, Lazarsfeld and Merton and the authors of *Union Democracy* have stressed the importance of "value homophily" and "similarity." Taking their lead, we may state the following proposition:

D15. For any given X or social characteristic the greater the number of categories into which it is (perceived to be) divided the greater the number of cliques which will form.

Given our proposition that positive bonds follow from similarity, it follows that where there is internal differentiation mutual bonds will tend to develop among subsets, and liking will be greater within cliques than between clique members and the rest of the group. Thus, a group composed of members of one religion cannot form cliques differentiated in religion; a group composed of members of two religions will tend to form two cliques based on religion; a group composed of members of N religions will tend to form N cliques based on religion.

D16. Unless the attitudes or characteristics are totally confounded, or there is no internal variation, the greater the number of characteristics or attitudes, the larger the number of cliques which will form.

Derivation 16 simply says that the addition of another characteristic will add to the possible logical cross-partitions of the group and hence to the number of cliques, unless the characteristic is totally undifferentiated or so confounded that there are no people falling in the logically possible additional classes.

D17. Cliques are more likely to form on the basis of strong attitudes than on the basis of weak ones.

As the absolute value of the liking of X increases, the mean value of bonds in homogeneous cliques increases and the mean value of bonds to non-clique members with opposite attitudes decreases, so that strong attitudes are predicted to produce greater clique differentiation than weak ones.

Considering N attributes, the greater their intercorrelation over individuals:

D18. The larger the size of the clique formed by those who share the attributes;

D19. The greater the differentiation between members of the clique formed by those who share the attributes and other members of the group;

D20. The greater the proportion of the group falling into two hostile cliques, one composed of those sharing all the attributes and one composed of those sharing none of the attributes.

While it may not be obvious, derivations 18, 19, and 20 attempt to restate some key propositions in Coleman's *Community Conflict* (3, pp. 21-23).

The argument can be put in terms of the statistics of association in contingency tables. Consider, for example, three attributes, $A \vee a$, $B \vee b$, and $C \vee c$. There are eight possible combinations, of which we are interested in ABC , abc , and the remaining six which we will call "intermediate." Persons in ABC possess all the attributes, persons in abc possess none of the attributes, and persons in the intermediate category possess some, but not all.

If A , B , and C are independent, the frequency of each type is given by multiplication of the marginal frequencies for the relevant attributes. If, however, there are

positive associations, then the groups *AB*, *AC*, and *BC* will contain more than the expected frequencies and (assuming no interactions) *ABC* will have a higher frequency than under independence. Thus, the greater the associations the greater the size of *ABC* and the clique formed by those in *ABC* (D18).

By the same argument, the size of *abc* must increase if association occurs or increases. Consequently, the size of "intermediate" must decline. Considering the members of *ABC*, as association increases, the number of "outsiders" who are in *abc* increases and the number of "outsiders" in intermediate decreases, meaning that a greater proportion of the outsiders have "nothing in common" with the clique members and a smaller proportion have "something in common" with clique members. According to the theory this should lead to increasing the difference between mean liking within the clique and mean liking outside, and hence the differentiation between *ABC* and the rest of the group (D19). Finally, as increasing association means an increase of the frequency of *ABC* and *abc* and a decrease of the frequency of intermediate, it follows that as the intercorrelations increase the percentage of the group falling in the antithetical (and thus, according to the theory, hostile) cliques *ABC* and *abc* increases (D20).

These propositions appear to restate Coleman's concept of "interlocking memberships" and the propositions on subgroup formation in "A Formal Interpretation of the Theory of Relative Deprivation" (4).

We can now establish a typology of group structures by combining the inferences from D15, D16, D17, D18, D19, and D20.

The rows in Table 1 stand for differences in the absolute number of dimensions. The columns designate differences in the associations among the dimensions. In the right-hand column is the extreme case where there are strong associations which are consistent in the sense that a reflected matrix would have a high preponderance

of positive signs. In the left-hand column is the opposite situation where the associations are low or associated in such a way that even a reflected matrix contains a large number of negative signs.

Def. 18. The *unity* of a group is the inverse of the variation (variance, standard deviation, etc.) in value of the member-member likings. The opposite of unity will be called *fragmentation*.

Definition 18 says that a unified group is one in which all members tend to like each other to the same degree and a fragmented group is one in which there tend

TABLE 1
TYPES OF GROUP STRUCTURE

No. OF DIMENSIONS	ASSOCIATIONS AMONG DIMENSIONS	
	Low or Inconsistent	High and Consistent
Many.....	"Interlocking"	"Polarized"
Few.....	"Simple"	"Dichotomized"

to be extremes of liking and disliking within the group. Note that this aspect of group structure is not the same as mean liking considered in definition 17. A group in which everybody is faintly hostile to everybody else is considered to be more unified and less fragmented than one in which most everybody dislikes most everybody but a few people like each other very much. The combination of unity and high average liking should, perhaps, be termed "solidarity."

D21. *Group Structure and Unity:*

a) *Simple:* In such groups there are few dimensions and they are not correlated.

For example, some primitive societies and most American primary schools are differentiated around the independent axes of sex and age, such as "old women" or "fifth-grade boys."

By the inferences from our theory a simple group should tend to form a small number of large cliques around the lines of differentiation.

b) *Dichotomized:* If, in what would otherwise be a simple group, the characteristics tend to be strongly associ-

ated, the number of subgroupings remains constant (unless the associations become "perfect") but more and more people are found in one or the other antithetical subgroup.

For example, one might think of the traditional Southern small town organized around the correlated characteristics of race and status, with two large groups of high status whites and low status Negroes, along with the smaller groups of low status whites and high status Negroes.

In comparison with the simple system a dichotomized group will have less unity because more of its people fall into situations where they have high similarity to a large number and low similarity to a large number of group members.

c) Interlocking: If, in what would otherwise be a simple group, the number of dimensions is larger, the number of subgroupings will increase, but the size of cliques will decrease.

For example, one might contrast the high school with the primary school. In addition to sex and grade, high-school students are differentiated on neighborhood, course of study, and extracurricular activities. The high school thus has more dimensions.

In comparison with a simple system, the interlocking system will be more unified, because for any given person there are fewer others who are socially identical or socially disparate. Along with high unity an interlocking group will tend to contain a large number of small cliques which are, however, not highly differentiated. Thus, the high school has both "more cliques" and "more school spirit" than the grade school.

d) Polarized: If, in what would otherwise be a simple group, the number of dimensions is large and the dimensions are strongly and consistently associated, the number of subgroupings increases and the size of polar social groups increases.

For example, one might think of the traditional New England mill towns which at one time were differentiated in wealth, religion, political preference, and nativity, but in such a way that being rich, Protestant, Republican, and native born tended to go together, as did being poor, Catholic, a Democrat, and foreign born.

Such a community should lie between the dichotomized and interlocking in terms of its

unity. The degree of cleavage between the polar groups should be high because each additional characteristic reinforces internal similarity and external contrast. Thus the several generations of common history and Protestant religion shared by whites and Negroes in the traditional Southern town are lacking in the mill town, and religion and nationality differences undoubtedly exacerbated the conflicts. However, social characteristics are seldom perfectly correlated, and even though the polar groups are more strongly differentiated than in a dichotomized group, fewer people fall into the extremes. The existence of some rich Catholics, Protestant Democrats, foreign-born Republicans, and poor native-born persons adds to the number of persons not included unambiguously in the polar groups, and thus adds to the unity of the group when compared with the dichotomized group.

From this point of view the existence of complicated group structures is seen as enhancing the unity of the group. At first glance, it may appear that the theory is much akin to Lévi-Strauss's theory of kinship structures (14). It should be noted, however, that the underlying idea is exactly the opposite, although it does not deny Lévi-Strauss's ideas. His theory is one of "organic solidarity" or exchange, rather than mechanical solidarity or similarity. Our theory says nothing about the exchange of women or other valuables between subgroups but rather says, in effect, that the existence of additional subgroups prevents group fragmentation by making less probable the development of large, cohesive cliques set totally apart from the rest of the group.

Let us now consider a final aspect of group structure—size.

In *Union Democracy* (15, pp. 163–75) there is an intensive analysis of the effects of group size, based on differences between small and large shops of printers. The main line of argument goes as follows:

In the small shops, a nonconformist voter to whom union politics is important cannot find that support in the shop itself; the small shops are usually too small to allow the creation within them of subgroups which stand against the

political sentiments of the majority in the shop. . . . In the larger shops there are enough men available of similar preferences for a man to find social support for his nonconformism [15, pp. 170-71].

Translating the argument into the language of the theory:

- D22. If a group has cliques, the larger the group the greater the probability there is that a clique of size N or larger exists.
- D23. The effect of group size on clique membership is stronger for persons whose attitudes and characteristics are in the minority.

In other words, for groups with the same degree of differentiation, the larger the group the greater the absolute number of persons who possess any particular combination of characteristics. Thus, if it is assumed that there is some absolute size necessary for the formation of a clique, the larger the group the greater the probability that a person with a particular combination of characteristics can find sufficient others to form a clique. Because of their smaller number to begin with, the proposition applies with special force to those whose characteristics are atypical. Thus, the probability of formation of cliques of deviants is affected by group size as well as the structure of the characteristics and attitudes in the group.

In the final section of this essay, we shall consider an additional structural factor, the frequency of occurrence of X .

CHANGES IN ATTITUDES AND OPINIONS

A whole tradition of social psychological research (group dynamics) has placed stress on the role of group relationships in the adoption and change in attitudes. Recently Homans has attempted to restate the principles involved (11, pp. 83-129). In addition, Coleman's analysis of community conflict (3) may be thought of as a similar analysis at the level of a larger group. Although the following propositions do not attempt to synthesize such a vast literature, a number of the key propositions

appear to be similar to those in balance theory. The similarity is no coincidence, Cartwright and Harary being members in eminent standing in the group dynamics fraternity.

We shall consider three situations:

- Def. 19. *Innovation* is a situation where initially the members either do not possess or have no degree of liking for a given X , and an attempt is made to introduce X into a group.
- Def. 20. *Attitude change* is a situation where initially most or all of the members possess X or hold a given attitude and an attempt is made to reverse the situation.
- Def. 21. *Conflict* is a situation where initially the members differ in their liking of X , some liking it, some disliking it.

Innovation.—The proposition that social relationships are a factor in the acceptance of new ideas and attitudes has become a major theme in contemporary communications research following the publication of Katz's and Lazarsfeld's *Personal Influence* (12). The general idea of group effects and opinion leadership can be stated in the language of our theory in terms of a general proposition and a series of subsidiary propositions specifying variations in the process.

- D24. *Person* is more likely to adopt an innovation if he has a positive tie of liking or similarity to the innovator.

If *Person* has a positive tie to *Other*, when *Other* "suddenly" likes X , *Person* can increase the net value of his relationship by only liking X (provided, of course, that he has no initial dislike of X , this being part of the definition of innovation).

Putting the same idea in terms of group level variables, we can say:

- D25. Innovations tend to diffuse rapidly within cliques but slowly between them.

Because cliques are defined in terms of high rates of positive ties, adoption of a new attitude or activity by a member will be followed by acceptance within the clique. Because, however, members of other subgroups and isolates have less positive or

even negative bonds with members of the innovating group, they will tend to resist or be late adopters.

- D26. Within a group the rate and degree of the acceptance of an innovation is proportional to the degree of liking of the members for each other.
- D27. Within a group the rate and degree of acceptance of an innovation is proportional to the homogeneity of the members in social characteristics.

Because liking and homogeneity produce positive ties, and positive ties affect acceptance, derivations 26 and 27 restate in balance theory the common proposition that acceptance is related to group cohesiveness and homogeneity.

- D28. Innovations initiated by highly liked people are more likely to be adopted than those initiated by less liked or disliked people.
- D29. Members most typical of the group in terms of attitudes and attributes will be relatively more successful as innovators.

Derivation 28 is the "opinion-leader" hypothesis and is a restatement of D5 in terms of average liking rather than a two-person situation.

- D30. Members of multiple cliques tend to be sources of innovation, providing that they are not disliked by or dissimilar to clique members.

Marginal men—those with a tie to more than one group—have long been noted as sources of innovations. In balance-theory terms, such a proposition is justified from the following: As an innovation diffuses through a certain clique, it will be eventually adopted by a "marginal member," although because he is less similar to the other clique members he is probably not an early adopter. Once he has adopted the innovation, however, he will tend to be an "early" adopter in his other clique (because he has more positive ties to the clique that began the process than other members of his alternate group). If he is liked in his "other" clique, he will then serve as an in-

fluential in the second clique and a source of innovation.

As the theory predicts that innovation is affected by clique membership, it follows that for larger groups the process of diffusion will vary with group structure as defined above.

- D31. In contrast to simple groups, within dichotomized groups acceptance of an innovation tends to begin rapidly but then to slow down or stop before acceptance is universal.
- D32. In contrast to simple groups, within interlocking groups acceptance of an innovation tends to begin slowly but to increase in rate and to become complete.

The arguments are as follows. In dichotomized groups, because of the large size of the two antithetical groups the original adoption is likely to be within one of them. Because of the high positive bonds, acceptance will be rapid within this polar subgroup. However, members of the opposite subgroup will tend to resist adoption because of their negative bonds to the adopting group. Therefore, after an original spurt, the innovation will slow down or cease its rate of acceptance. The opposite is predicted to occur in interlocking groups. Here the initial adopting clique is likely to be small and its mean positive bondness not as high as for the polar group. However, because there are fewer antithetical cliques in the interlocking system the process of diffusion should proceed steadily and by a snowball process eventually include most of the group.

Attitude change.—A classical problem in social psychology is that of the process by which a campaign reverses the attitudes (degree of liking of X) of members of a group. A number of common conclusions about this process may be drawn in terms of balance theory.

- D33. It is more difficult to reverse the attitudes of individuals when they are members of a group with high consensus on the attitude.

This derivation may be thought of as the balance-theory hypothesis on "social sup-

port for attitudes." The reasoning, of course, is that if a larger number of persons in the group like (or dislike) *X*, and *P* has positive ties of liking or similarity to the group, for *P* to reverse his liking of *X* may lower the net value of his cycles considerably. One of the major lessons of research on propaganda and communication is that all too often a communicator must ask *Person* to pay the price of setting himself against his friends in return for the scant gains of changing an attitude.

As before, certain variations in the process may be set forth:

- D34. The greater the degree of liking within a group the greater the resistance of its members to attitude change.
- D35. The greater the degree of similarity in characteristics and attitudes other than *X* within a group the greater the resistance of its members to changes in attitude toward *X*.

Derivations 34 and 35, of course, merely restate D26 and D27 in terms of attitude change rather than innovation. The opinion-leader hypotheses come out in a different form, however.

- D36. Members who dislike or are indifferent to the others are more likely to change their attitudes.
- D37. Members who are atypical of the group in characteristics or attitudes other than *X* are more likely to change their attitudes.

While derivations 28 and 29 said that typical and well-liked members tended to be sources of innovations, derivations 36 and 37 say that atypical and uninvolved members tend to be the beachheads for attitude change. The reason is that their bonds to other members are zero, or negative, and hence adoption of an attitude opposite to their associates does not lower their cycle values. Whether members with mild liking or lesser similarity are easy targets is a moot point. One might argue that since their bonds are lesser they have less to lose by changing their attitudes, but one might also argue that they are in dan-

ger of losing what little they have. Probably it depends on the value of their bonds to members in other groups. If the group in question is their only source of social rewards, they probably resist change, but if they have a foothold elsewhere they are free to change (10, p. 118). In more formal terms:

- D38. For a person with positive bonds in a clique or peer group, group pressure to resist attitude change is inverse to *Person's* positive attachments to other groups with opposite degrees of liking for *X*.

For purposes of theoretical analysis we have been assuming that the initial situation was one of 100 per cent liking (or disliking). In reality, of course, deviants always exist, and the theory allows us to derive some consequences of continued deviance, in a proposition often presented in group dynamics literature and treated at length in *Social Behavior* (10, pp. 112-29).

- D39. In a group in which most, but not all, members like (or dislike) one or more *X's*, the degree to which a given member is liked is proportional to his adoption of the majority attitudes.

The proposition says that conformity leads to being liked, deviance leads to being disliked. The argument is that the deviant creates unbalanced cycles for conformers who then lower the amount of their dissonance and sometimes change the cycle to positive by lowering their degree of liking for the deviant. Conversely, high liking of those who conform raises the net values of the cycles for other conformers.

Conflict.—What happens when the initial proportion liking (or disliking) *X* is neither zero nor 100, but some intermediate figure, has long been discussed at the microscopic level as "group pressures toward conformity" and has been analyzed recently at the macroscopic level in Coleman's *Community Conflict* (3). According to balance theory the process and outcome will vary according to the structure of the group. We will consider first what is predicted for a clique and then turn to propo-

sitions concerning differentiated groups. In each case we shall consider what happens when a "new X " appears and there is a division among the members into those liking and those disliking X .

- D40. In a clique attitudes will tend to converge on unanimity.
- D41. The greater the degree of liking of the members for each other the faster the convergence and the nearer unanimity the final outcome.
- D42. The greater the degree of similarity of the members in terms of attributes other than X the faster the convergence and the nearer unanimity the outcome.
- D43. The stronger the initial attitudes the faster the convergence and the nearer unanimity the outcome.
- D44. Pressures toward change in attitudes or toward more vigorous proselytizing will be more common for (a) those on the minority side, (b) those with the strongest initial attitudes, (c) those who like the greatest proportion of the other members, (d) those who are most typical of the group in terms of personal characteristics.
- D45. The "side" with the greater proportion of well-liked members will tend to win.

The general form of the proposition is now familiar, but the line of reasoning in this case is as follows: The general proposition of convergence stems from these considerations. If initial bonds are positive (as they are by definition in a clique) the emergence of disagreements will lower the net values of the cycles to each member. By either changing their own opinions or by influencing others, the members will tend to raise the level of agreement, the condition giving the highest net gain being unanimity. Derivations 41–43 state the conditions that produce the greatest average dissonance in the group and hence the greatest pressure to achieve unanimity. Derivation 44 enumerates the particular subgroups in the group who will suffer relatively greater dissonance, and hence the greatest pressure to change or change Others. Finally, derivation 45 is another restatement of D5 on imitation.

In the differentiated group containing more than one clique, the process, as analyzed by Coleman, is somewhat different, essentially because positive bonds are not distributed evenly throughout the population. Rather such a population may be thought of as N cliques, whose degree of hostility to each other is a function of the degree to which the total group is interlocking or dichotomized. The development of an issue then simply serves as an additional dimension. The process predicted is as follows:

- D46. When an issue arises cliques tend to move toward internal homogeneity, with consequent increased differentiation between cliques.
- D47. If the issue is one where feelings are very strong, there will be a tendency toward polarization.
- D48. Polarization will be less likely in groups where there was initially a low degree of association in characteristics and attitudes or a high number of dimensions.
- D49. Individuals who belong to multiple groups will develop less strong attitudes.
- D50. Subgroups that are representative of the group as a whole will tend to take no stand on the issue.

The theory predicts that the process will go as follows: Once an issue arises the subgroups in the community will move toward homogeneity in opinion according to the derivations stated above for cliques. As they become internally consistent, their differentiation from those groups converging toward the opposite side increases (D46). If, however, the issue is very heated, all the subgroups on one side tend to develop a more positive bondedness, and there is a tendency toward the development of two camps (D47). As Coleman notes, the degree and rapidity of polarization will be less where existing characteristics were loosely associated and attachments were thus distributed widely throughout the group (48). In addition, cross-pressured individuals (D49) will tend to have no opinion at all, and groups that are representative of the community (e.g.,

civic organizations), being heavily cross-pressured, will tend to take no stand at all (D50), leaving initiative in the hands of "extremist" groups whose internal dissonance is less, a phenomenon characteristic of desegregation conflicts in the American South.

While the propositions have been developed in terms of Coleman's analysis of unstructured community issues such as fluoridation controversies, the derivations also restate some of the major theoretical generalizations from *Voting* (1) on social processes in electoral campaigns. Thus the authors of *Voting* conclude that, as an electoral campaign continues, groups tend to become homogeneous in political attitude ("The campaign increases homogeneity within and polarization between religious groups and occupational groups" [1, p. 149]), and that cross-pressured individuals and groups tend to have unstable and weak voting intentions.

RELATIVE DEPRIVATION

The final social-psychological concept to be considered is relative deprivation (4, 16, 17), the proposition that people tend to assess rewards and punishments not only in terms of their intrinsic hedonic value but also by comparison with standards based on the experience of others (reference persons and groups).

Because we have to treat unit formation and liking for *Person* and *Other* simultaneously, it will be helpful to shift to a more formal approach. The postulates of the theory can be translated into the following:

$$\begin{aligned} \text{Value to } P &= (L_{PX} + U_{PX}) \\ &\times (L_{OX} + U_{OX}) \quad (1) \\ &\times (L_{PO} + r_{PO}), \end{aligned}$$

where *L* stands for the degree of liking, *U* for the degree of unit formation, *r_{PO}* for the correlation between *P* and *O* over attributes other than *X*. Subscripts are asymmetrical except for *r_{PO}*.

While the previous section concerned

liking, the issue here is possession, or, in the language of the theory, the unit relationship. In considering attitudes, we assumed in effect that the unit relationship was irrelevant, that is, in equation (1), the terms *U_{PX}* and *U_{OX}* were equal to zero.

In analyzing relative deprivation, however, liking and possession have to be considered simultaneously.

Def. 22. *X* is a value if everyone in the group likes *X* or if everyone dislikes *X*.

Valuing is not necessarily the same as possessing. One may like money or promotions or good grades but not possess them. One may dislike poverty, demotions, or bad grades but still possess them. With this in mind let us consider what happens when: (a) *X* is a value, (b) there is a positive bond between *Person* and *Other*, (c) there is a discrepancy between *Person* and *Other* in terms of the possession or degree of possession of *X*.

We note that if *U_{PX}* and *U_{OX}* are both zero, the net value of the cycle to *Person* will be positive under the stipulations, and also that the value will be positive in any situation in which *U_{PX}* = *U_{OX}*.

Because the stipulations require *L_{PX}* to be the same as *L_{OX}* the subscripts can be dropped and the equation rearranged:

$$\begin{aligned} \text{Value to } P &= [L^2 + L (U_{PX} + U_{OX}) \\ &\quad + U_{PX}U_{OX}] \quad (2) \\ &\quad \times (L_{PO} + r_{PO}). \end{aligned}$$

Put this way it can be seen that the contribution of the two *U* terms is a function of their sum plus their product. Exactly what will happen will depend on the sign and value of *L* and the specific values of the two *U* terms, but for present purposes, the following generalizations will serve: (a) if *L* is positive and *U_{OX}* is some positive number, the value of the cycle to *Person* is proportional to the value of *U_{PX}*; (b) if *L* is negative and *U_{OX}* is negative, the value of the cycle to *Person* is inversely proportional to the value of *U_{OX}*; (c)

if L is positive and U_{PX} is positive, the value of the cycle to *Person* is directly proportional to U_{OX} ; and (d) if L is negative and U_{PX} is negative, the value of the cycle to *Person* is inversely proportional to U_{OX} . Translating from algebra into the language of the theory:

- D51. Under the stipulations above, if *Other* possesses an X that both *Person* and *Other* like, the less X that *Person* possesses the lower the value of the cycle to *Person*.
- D52. Under the stipulations above, if *Other* does not possess an X that both *Person* and *Other* dislike, the more X that *Person* possesses the lower the value of the cycle to *Person*.
- D53. Under the stipulations above, if *Person* possesses an X that both *Person* and *Other* like, the more X that *Other* possesses the greater the value of the cycle to *Person*.
- D54. Under the stipulations above, if *Person* does not possess an X that both *Person* and *Other* dislike, the less X that *Other* possesses the greater the value of the cycle to *Person*.

Let us compare these results with the analysis in "A Formal Interpretation of the Theory of Relative Deprivation." In that paper three psychological states were postulated (4, p. 283):

When a deprived person compares himself with a non-deprived person, the resulting state will be called "relative deprivation. . . ."

When a non-deprived person compares himself with a deprived person, the resulting state will be called "relative gratification. . . ."

A person experiencing *either* relative gratification or relative deprivation will also experience a feeling that his deprivation status is different from that of his peers. We will call this "fairness" in the sense that it indicates a belief that there is differential treatment in the in-group.

It thus appears that lack of "fairness" is the logical equivalent of imbalance and that all the propositions about fairness in "A Formal Interpretation" can be translated into balance theory. Specifically, we can restate the propositions on the distri-

bution of rewards to complete our analysis of group structure, begun previously in the consideration of number of dimensions and associations among dimensions.

- D55. Within a clique, as the proportion receiving a given value increases (or the proportion not receiving a given negative value decreases):
- a) Cycle values decrease among those whose situation is less favorable.
 - b) Cycle values increase among those whose situation is more favorable.
 - c) For the group as a whole, average cycle values decrease as reward levels move from zero to 50 per cent and increase as reward levels move from 50 per cent toward 100 per cent.
- D56. Within a group with two cliques, the distribution of rewards (or punishments) will affect group differentiation as follows:
- a) To the extent that reward distribution is correlated with clique membership, it will lead to greater clique differentiation.
 - b) To the extent that reward distribution tends toward fifty-fifty within a clique, it will lead to lessened clique differentiation.

While balance theory turns out to be involved in the theory of relative deprivation, the theory of relative deprivation cannot be totally encompassed within it. In particular, the idea of relative gratification goes beyond balance theory in a way which indicates some important limits to the theory.

Although relative gratification is postulated to produce a lowering of (POX) cycle value, and people are postulated to prefer high cycle values, the theory of relative deprivation assumes that relative gratification is satisfying to *Person*. How can these two hypotheses be reconciled? We think the answer comes from the fact that the value of the POX cycle is only one of many sources of gratification for ego. Thus, while surpassing one's peers does indeed lower the rewards from peer relationships, the compensation in terms of intrinsic gratification from the reward or the feeling of competitive success may more than com-

pensate for the loss. Whether the value of a positive (*POX*) cycle outweighs the value of the reward (as it apparently does in the case of restriction of output among work groups) or whether the value of the reward is greater (as it is when student peers compete for grades) is not predictable from balance theory alone.

If these reflections are valid, they suggest that balance theory is of decreased utility in social situations where there is a short supply of a highly valuable *X*.

We can illustrate this limitation from the area of politics. According to the theory, if *Person* meets *Other* and it turns out that they both like a given political candidate, the theory predicts that they will tend to like each other precisely because they share a liking. Consider, however, the two candidates themselves. The fact that Kennedy liked the presidency and Nixon liked the presidency did not imply that Kennedy and Nixon liked each other. Although it must be admitted that sometimes competitors do develop a liking because they have something in common (e.g., trial lawyers or rival athletes), in the case of the presidency, although both candidates "liked it," only one could possess it, and this unavoidable asymmetry means that often candidates are willing to sacrifice their positive peer relations to gain the prize.

This important qualification allows us to set the theory in some perspective. We feel that within a broad and important area of social life, the theory presented manages

to integrate a considerable number of ideas and findings. At the same time, it is not presented as a complete theory of human behavior. The theory claims that positive cycles of similarity are attractive to people, but it must admit other sources of motivation. The dissimilarity in exchange between differentiated people and the dissimilarity of triumph in competition also are sources of reward that may outweigh the values of the cycles discussed. What balance theory maintains, however, is that there must be some gain in exchange and high reward from competition to offset the imbalances that occur.

SUMMARY

Balance theory, a social-psychological theory developed by Cartwright and Harary (2) to formalize concepts set forth by Heider (9), has been used to restate in a common language fifty-six propositions from the writings of Berelson *et al.* (1), Coleman (3), Davis (4), Durkheim (5), Festinger (6, 7), Fiedler (8), Homans (10, 11), Katz and Lazarsfeld (12), Lazarsfeld and Merton (13), Lipset *et al.* (15), Merton and Kitt (16), and Stouffer *et al.* (17).

Despite the wide range of topics covered by the theory it is not advanced as a general theory of interpersonal relations but as a theory of one major component. It is suggested that a general theory of interpersonal relations must consider, in addition to balance, the exchange process and the effects of competition for scarce values.

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