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The Union of Opposites in Sociometry

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ABSTRACT. This article presents an empirical study that (a) introduces the sociodynamic test, which adds to the sociometric test (Moreno, 1934; Hale, 1981) a measure of coexisting opposite preferences underlying sociometric choice; (b) outlines how the sociodynamic method is used clinically; (c) demonstrates empirically that preferences are more predictable than choices, suggesting preference rather than choice data should be used when measuring interpersonal perceptual accuracy; and (d) illustrates nonlinear patterns of choosing and bonding by maintaining the integrity of coexisting opposites by plotting positive and negative preference with their corresponding sociometric choice. The study also illustrates how a new general theory of processes helps to identify a problem in clinical and experimental measurement; serves to design a method to overcome it; and directs us toward mathematical dynamics for the analysis of nonlinear patterns.

WHEREAS THEORETICAL AND CLINICAL PSYCHODYNAMICS stress the conflictual and contradictory nature of psychological and interactional processes, the sociometric assessment of choice (Moreno, 1935) does not allow the measurement of ambivalence (Hale, 1987). This omission renders choice a poor estimate of preference, limiting the usefulness of the sociometric test as a measure of interpersonal perceptual accuracy and compromising the informational value of sociograms that do not include ambivalent bonds. This article introduces a sociodynamic test that includes the sociometric measurement of choice and adds to it the independent measurement of the intensity of coexisting positive and negative preferences that underlie sociometric selections. The aim of this article is threefold: (a) clinically, to present a method useful to reveal contradictory preferences and their influence on group dynamics, which is being currently used in groups of psychiatric patients; (b) experimentally, to present a study demonstrating how the same method, as a paper-and-pencil test, enhances the sociometric instrument; (c) theoretically, to

discuss how process theory, a new perspective in psychiatry (Carlson-Sabelli & Sabelli, 1984; Carlson-Sabelli, Sabelli, Hein, & Javaid, 1990; Sabelli, 1989; Sabelli & Carlson-Sabelli, 1989, 1991; Sabelli, Carlson-Sabelli, & Javaid, 1990 a & b), serves as a conceptual framework to identify a problem that limits the validity of commonly used methods of measurement in and beyond sociometry. It also suggests a solution that incorporates mathematical methods considered at the forefront of today's scientific research in a wide variety of areas (Babloyantz, 1986; Callahan & Sashin, 1987; Garfinkel, 1983; Guastello, 1987, 1988; Guastello & McGee, 1987; Prigogine & Stengers, 1984; Thom, 1975; Tsonis, P., & Tsonis, A. 1989; Yates, 1982; Zeeman, 1976).

The sociometric test introduced by Moreno (1934) consists of "an individual choosing his associates for any group of which he is or might become a member (cited by Bronfenbrenner, 1943, p. 365). On the standard sociometric test (Hale, 1981), subjects are asked to list choices and rejections in order of preference and to list the individuals each "chooses not to choose." Analyzing sociometric data provides information about the individuals and their position within a group. It can be used to identify leaders, isolates, rejectees, subgroupings, connectors, status, and expansiveness (Moreno, 1935; Proctor & Loomis, 1951; Roistacher, 1974). Sociograms provide visual configurations of the bonds among group members, reflecting the way the individuals organize themselves around various criteria (Moreno, 1935).

The sociometric test, congruent with the traditional logic prevalent at the time of its conception, is based on the assumption that sociometric choices and rejections are a direct reflection of the forces contributing to them. It considers choice/attraction and rejection/repulsion as the opposite poles of a single continuum. Although sociometric selection and rejection are dichotomous and mutually exclusive, attraction and repulsion are not. Furthermore, within this mechanistic view, it is expected that an increase at one pole (attraction) necessarily represents a decrease at its opposite (repulsion). When two opposites are equally powerful, the corresponding equilibrium would be equivalent to neutrality. This, of course, is not the case. Instead, when two strongly opposing forces are present, we observe processes of ambivalence. Many opposites grow together, such as love for and animosity against a family member. Attraction and repulsion may coexist as ambivalence or, more generally, as contradictory preferences.

Although ambiguities, contradictions, and ambivalence can be observed in the reasons individuals give for the sociometric selections they make (Moreno, 1934), the data have not been available for statistical or sociogram analysis. Thus, in spite of its clinical usefulness, the sociometric test

has profound limitations that derive from its inability to consider contradictory situations, interpersonal ambivalence, and emotional ambiguities.

The impact of this problem is especially notable when the sociometric test is used as a measure of interpersonal perceptual accuracy (Moreno, 1942). Accuracy of interpersonal perception is measured as the congruence between sociometric selection (choice, rejection, neutrality) by a group member concerning the subject and the guess of the subject concerning each selection (Katz & Powell, 1953). A subject who is indifferent or ambivalent toward another cannot adequately describe the situation within the linear confines of the sociometric measure. Guesses are limited by the same constraints, doubling the impact of the problem. Our modification, measuring the tendency to choose separately from the tendency toward rejecting, is designed to address this problem—to provide a means of expressing contradictory preference—both wanting to choose and not wanting to choose another, at the same time and for the same reasons. The sociodynamic addition is based on the assumption that choice and rejection represent a bifurcation resulting from a complex interaction between mutually contradictory positive and negative preferences. This interaction includes thresholds and cannot be modeled by an algebraic sum (linear model). Correspondingly, the relation between the intensity of preferences and rank of choice seldom fits a straight line. This problem could not be solved within the conceptual framework of two-valued logic or linear metrics. To overcome these limitations, we developed a sociodynamic test that applies the geometric methods of mathematical dynamics and the underlying concept of the union of opposites.

Theoretical Analysis of the Problem

In traditional sociometry, both the data collection method and analysis are based on assumptions arising from the either-or separation of opposites of Aristotelian and mathematical logic and from the mechanistic tradition of Newtonian dynamics (numerical calculus). This linear mechanical model, in which opposing forces balance and neutralize each other, can deal only with simple processes that are determined, reversible, and near equilibrium; it cannot accommodate the coexistence of opposing feelings, drives, or preferences, which Freud (1923/1958), Adler (1954), Jung (1959), and others have described as characteristic of psychological processes. Evolutionary scientists such as Darwin, Marx, and Freud based their theories on another model of processes, a conflict view based on dialectics. The dialectic approach recognizes that processes are fueled by the contradiction of opposites. This model highlights the interpenetration of opposites but exaggerates their struggle, minimizing their

harmonic interactions. Furthermore, dialectics lacks mathematical methods for the study of processes.

A third model of processes, process theory (Carlson-Sabelli & Sabelli, 1984; Sabelli, 1989; Sabelli & Carlson-Sabelli, 1989, 1991; Sabelli et al, 1990a, b), focuses on the coexistence of harmony and antagonism (Heraclitus's union of opposites) and uses the geometric methods of modern dynamics to study mathematically the nonlinear patterns of processes resulting from complex interactions (Abraham and Shaw, 1982, 1983). Going beyond calculus, this new mathematical science of processes has already revolutionized physics (Prigogine & Stengers, 1984) and biology (Thom, 1975; Garfinkel, 1983; Yates, 1982). Catastrophe and chaos theories are now beginning to enter the social and the psychological sciences (Woodcock & Davis, 1978; Callahan & Sashin, 1987; Guastello, 1987, 1988; Guastello & McGee, 1987; Zeeman, 1976). Dynamics uses geometrical models with two (phase plane) or three (phase space) dimensions (Abraham and Shaw, 1982) to analyze the pattern of processes that do not fit the unidimensional linear model. Characteristically, complex processes tend to converge to simple attractors describable in terms of a limited number of dimensions (Abraham & Shaw, 1982; Garfinkel, 1983). One can then study complex processes by examining plots in two or three dimensions. The choice of the variables taken as coordinates is a difficult and critical step for which dynamics itself can offer no suggestions. Process philosophy (Heraclitus, Lao-tzu, Hegel, Engels, Whitehead; see Sabelli, 1989) provides a theoretical basis for the choice of fundamental variables in its notion of the union of opposites, namely, that processes are energized and patterned by the intercourse of coexisting opposites. For instance, social processes are fueled by the interactions and contradictions between supply and demand, rich and poor; matter is constituted by positive protons and negative electrons; and life itself is energized and procreated by the intercourse of opposite sexes.

Thus, process theory suggests that choice-making should be studied as a function of the underlying positive and negative preferences that coexist, albeit in various degrees. Whereas the principle of the union of opposites occupies a central place in process philosophies and in quantum physics (Bohr's complementarity principle, see Capra, 1975; Kothari, 1985), it was not practical to apply it to empirical data until the birth of modern dynamics.

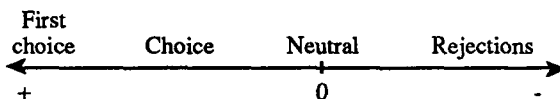
Applying these concepts to sociometry: Groups are organized by the recurrent interactions between their members, which are of two opposite signs—attraction and repulsion. Interpersonal harmonies and conflicts overlap; likewise, any social system produces both social communion and social alienation. Both attraction and repulsion are bonds, forms of

interaction and exchange. The balance of attractions and repulsions determines interpersonal distance, which is at once a bond and a separation. In a group, the attractions and repulsions among all members contribute to the interpersonal distance between each pair, as the attraction for one serves to separate from others. Each person is procreated, raised, and lives within an evolving population. Given the constant changes in intrapsychic motivations and social groupings, interpersonal distance is constantly changing. To measure choice, we need to know both interpersonal distance and the vector representing its change. At any one time, two persons can approach or separate or stay at the same distance; one distance and one vector of change results from the interaction of these multiple attractions and repulsions. This resultant is not always a linear vector product of the interacting forces, which can be represented in the same plane. Choice often is a nonlinear process including ambivalence, uncertainty, contradiction, and creativity. The topological approach of modern mathematical dynamics may be a useful way to study such complex processes. Kurt Lewin (1935) has already proposed topological methods to study the dynamics of social reality in interpersonal relations. The sociodynamic test introduced here measures coexisting opposite preferences and the resulting choices independently and plots them in a tridimensional phase space. This geometric approach avoids the linear simplifications imposed by the use of purely metric methods.

Under the influence of contradictory demands, people in crisis are highly influenceable by psychotherapy (Sifneos, 1980). In a similar manner, physical processes containing contradictory forces are creative and readily modifiable (Abraham & Shaw, 1983; Prigogine, 1980; Prigogine & Stengers, 1984; Thom, 1975). The coexistence of opposing forces produces fluctuations; intense oppositions produce qualitative changes in behavior ("bifurcation"), such as sudden switches from one extreme to the other (Thom, 1975; Zeeman, 1976), the occurrence of "chaos," or the creation of novel alternatives, progressive or pathological (creative bifurcations). Chaotic processes are drastically altered by minor influences ("butterfly effect"). Examples of these various possibilities are the ambivalence of a person in a stormy relation (chaos); the over-idealization or total rejection of a significant other by borderline patients, with sudden switches (catastrophe); and the creation of new alternatives, a creative bifurcation, whether useful—Moreno's true spontaneity (1966)—or neurotic behaviors, such as the abnormal behavior developed by animals when placed in contradictory approach-avoidance situations—Moreno's pathological spontaneity. The sociodynamic test, which applies the process theory concept of the union and bifurcation of opposites to the measurement of preference and choice, adds measures of the coexisting opposite preferences

underlying choice to the standard sociometric test. Figures 1, 2, and 3 compare the unidimensional sociometric test (A) with the bidimensional phase plane of coexisting opposites (B) and illustrate through a tridimensional phase space (C), the relationship of coexisting opposites and choice. The intensity of positive preference (feelings and reasons for choosing a particular partner) is measured separately from the intensity of negative preference (feelings and reasons for rejecting). When both of the coexisting op-

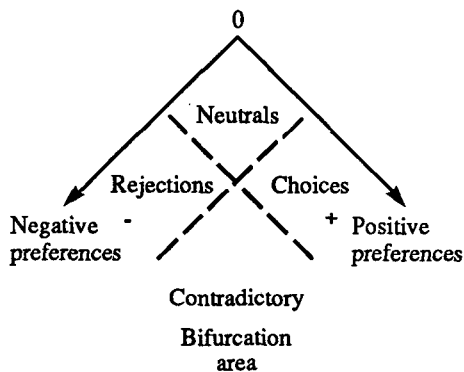
A. Sociodynamic continuum



A The sociometric test elicits choices in a linear manner from first choice to last. Choice and rejection are mutually exclusive opposite poles of a single dimension.

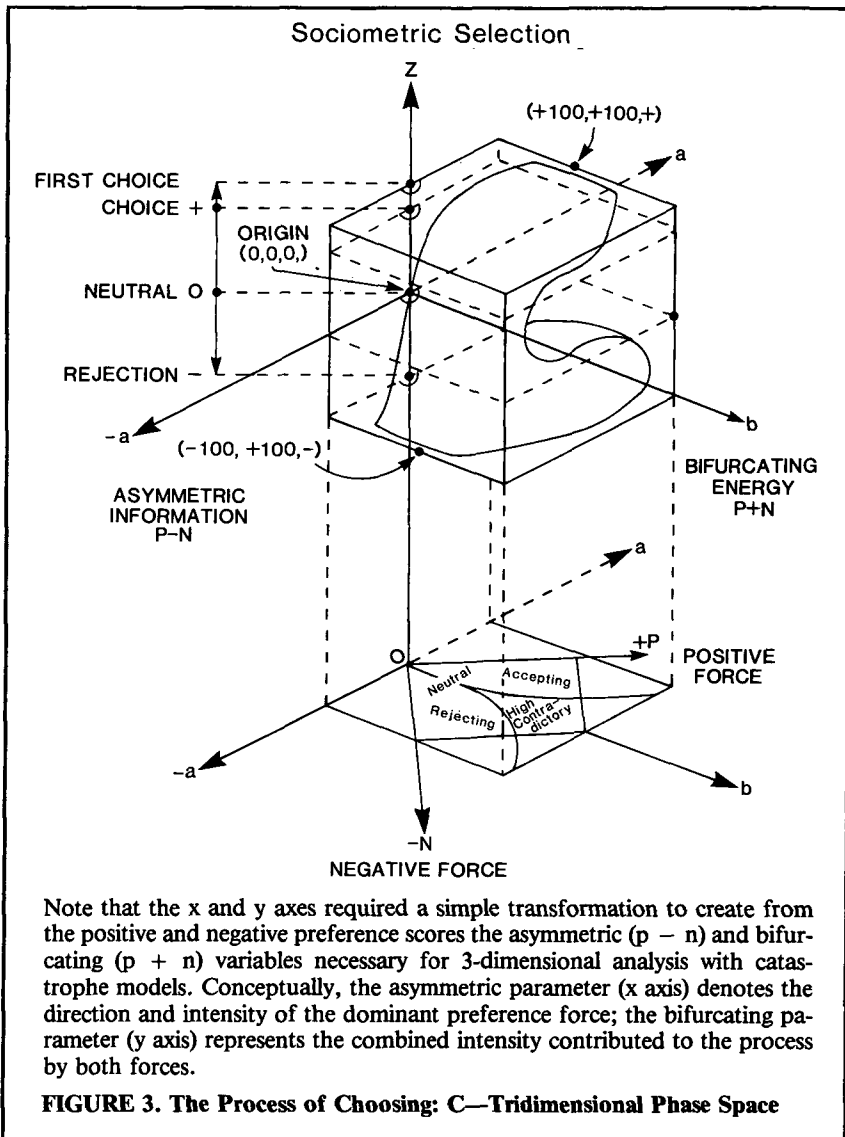
FIGURE 1. The Process of Choosing: A—Unidimensional Sociometry

B. Sociodynamic phase plane



B Bidimensional sociodynamic phase plane: the axes represent the intensity of coexisting positive and negative preferences. The cutting point to create categorical scores from the sociodynamic data was 50.

FIGURE 2. The Process of Choosing: B—Bidimensional Sociodynamic Phase Plane



posites—intensity toward choosing and intensity toward rejecting—are high, conflictual preference may emerge as a separate category. The state of intense contradiction is unstable, chaotic, and often transient, rapidly bifurcating to one or the other opposite—to choosing or rejecting. Thus, it is expected that only a few of the coexisting contradictory preferences will

be intense enough to fall into the contradictory category (bifurcation areas of Figure 1 and Figure 3). Nevertheless, by measuring preference as a bidimensional construct, the sociodynamic method provides an estimation of ambivalence behind each choice, making available for quantitative and dynamic analysis information found only in the reasons for choice on the sociometric test.

Clinical Observations

In recent years, we have introduced the process bidimensional framework as an action method with groups of psychiatric patients and students (Sabelli, 1989, p. 405). We ask group members to place themselves within a large *V* drawn in the center of the room (sociodynamic phase plane of Figure 2). The intensity of opposing preferences, emotions, attitudes, and feelings are represented by the two axes. The vertex of the *V* represents zero feelings (indifference or neutrality). For instance, in a psychodrama group, the left axis may represent the intensity of positive feelings toward choosing oneself to be the protagonist, and the right axis would represent the intensity of opposite feelings against becoming the protagonist. Group members are asked to stand within the *V* at the point determined by the intensity of both their negative and positive preferences. All group members make their choices simultaneously and thereby influence each other. This sociodynamic action test produces a moving scenario when opposites of high intensity exist together. Those with strong reasons for both choosing themselves and not choosing themselves place themselves high on both axes, high within the *V*, and almost always pace or rock. Indifferent individuals stand quietly, near the vertex. The individuals with strong, intensely contradictory feelings, pacing in the bifurcation area near the top of the *V*, are ready to change and, hence, to become the protagonists. The neutral individuals near the vertex are less motivated and less ready to be the group's protagonists.

These sociodynamic exercises are useful in encouraging the expression of feelings, as are other action methods. One can use the sociodynamic *V* to represent opposite emotions or perceptions instead of the often-used method of asking group members to place themselves on a linear continuum according to how angry or anxious they are, how they feel about some topic, or how masculine and feminine they consider themselves. The *V* representation provides insight into this coexistence of passivity and aggressivity, whereas the linear method forces the patient—and the therapist—to think in black-and-white dichotomies. For example, a continuum represents passivity as the opposite of aggressivity and assertiveness as a midway neutrality. In reality, high degrees of passivity can coexist with high degrees of aggressivity, as passive-aggressive personalities illustrate; in

their treatment, passivity can be reduced if, and only if, aggressivity is also reduced. Relevant examples of the need to distinguish the neutral or indifferent from the contradictory include the following: a person with high masculine and feminine traits in contrast to another, who has low intensity in both directions; a person who loves and hates his parents compared with one who is indifferent to them; a person whose self-view encompasses both low self-esteem and grandiosity, as is often observed in depression and in self-disorders.

The two senior authors regularly use bidimensional sociodynamic methods in their clinical practice, finding that these methods bring out more of the complexity surrounding a variety of issues than the unidimensional action continuum and the standard sociometric test alone. There is, at present, no empirical study supporting these clinical observations.

Experimental Study

This study empirically examines the coexistence of contradictory preferences and considers why they are important in the process of making choices. For this purpose, we have expanded the standard written sociometric test to include a measure of the intensities of opposite preferences underlying choices. The predicted impact is that subjects will have a more complete domain in which to report interpersonal preferences and predictions. As ambivalent persons change their choices over and over, it is difficult to predict which choice they would make when filling out a questionnaire. Predictions of choices are therefore likely to be uncertain. On the other hand, the ambivalence can be accurately measured as the coexistence of contradictory preferences. Hence, when a criterion brings out contradictory preferences, it will be less likely that we can predict the interpersonal preferences of other for self with the sociometric test, which measures only choices, than with the sociodynamic test, which measures preferences. Conversely, the accuracy scores should be similar for both methods, with criteria eliciting little contradiction.

Methods

Subjects

The subjects were 12 university students in a psychodrama course who had known each other for at least 3 weeks. They were all white women; their ages ranged from 22 to 61 years. All tests were administered in the same session during the third week of class. The sociometric test was administered before the sociodynamic measurement of preferences. Students were informed that their choices would not be made known to the

group members, but that one of the questions would be used as data for organizing a future activity. The students were also told that they would receive a personal profile indicating their individual patterns of choosing and their perceptual accuracy. These two conditions were made to enhance involvement and honesty.

Tests

The sociometric test used was that published by Hale (1981/1985, pp. 71-77). In brief, it asks subjects in a group to identify from among the other members in the group those with whom each would like to associate and not associate in a particular future situation or specific activity. The activities or situations are called "sociometric criteria," and group members are asked to list each other group member in one of three categories: choose to, choose not to, choose to be neutral toward. Both the positive and negative choices are listed in order of preference. There is no limit to the number of persons within each category. Subjects are then asked to predict in what category each of the other group members would place them. Finally, the reasons for intended choices and predictions are requested.

For the sociodynamic measurement of preference, we asked subjects to assign two separate numbers (from 0 to 100) to the intensity of their preferences for choosing and for rejecting each of the other group members as a partner for a specific activity. Fifty was explicitly stated to represent moderate preference. In the same manner, we requested each subject to predict the positive and negative intensity scores each other group member would assign to the subject.

Sociometric criteria

The same three different criteria were used for both measures. To highlight differences in precision between the sociometric and sociodynamic measures, we selected criteria likely to engender different thresholds of choice and rejection. Based on the work of Jennings (1947a, 1947b) and Hale (1981/1985), we expected highly threatening personal criteria to elicit a sharp dichotomy of choices versus rejections; in contrast, with low-threat social criteria, we expected greater degree of ambiguity and tolerance.

1. Work criterion. "With whom in the group do I choose to work on a project assigned by the leader of this group?" We designed this social criterion to allow for the highest degree of contradictory preference.

2. Pleasure criterion. "With whom in the group do I choose to spend a few hours, doing something pleasurable of our own choosing?" This low-threat personal criterion was designed to elicit a moderate amount of contradiction in the preferences.

3. Intimacy criterion. "With whom in the group do I choose to exchange and discuss in some detail an intimate secret—a secret that no one in this group already knows?" This high-threat personal criterion was designed to engender the least amount of ambiguity, hence the lowest degree of contradiction in the preference data.

Scoring

The choice and prediction data were entered on 12×12 sociomatrices, broken down by criteria. The metric data were coded into three categories—choice, rejection, or neutrality. The positive and negative preferences were analyzed as raw intensity scores and also converted to categories—choice, rejection, neutrality, and contradiction—for comparison with the metric data. To create these categories, the intensity score of 50, designated as the moderate value on the sociodynamic test, which gives equal extension to the four domains of neutral, positive, negative, and contradictory preference, was used as the cutting point. These categorical scores were used when comparing the number of accurate perceptual predictions individuals were able to achieve with the two methods (Table 4): Choice = positive preference > 50 paired with a negative preference of 50 or less. Rejection = positive preference of 50 or less paired with a negative preference > 50. Neutrality = both positive and negative preference of 50 or less. Contradictory choice = both positive and negative preference > 50. The subject's prediction of others' choices and preferences toward self were compared with the actual choices and preferences stated by the others.

Statistical and Mathematical Analysis

Data analysis included regression analysis, dynamic geometry—phase plane and phase space portraits—and computation of indices of conformity to measure interpersonal perceptual accuracy. All of the above data were analyzed statistically, using the standard parametric and non-parametric tests described below.

Regression analysis of intensity scores for positive and negative preference was performed with a BMDP 1R computer program (Dixon, Brown, Engelman, Hill, and Jennrich, 1984/1988) to investigate whether or not interpersonal preference is really linear or whether it is forced into an inverse linear model by the sociometric method. If preference is

linear, then an inverse relationship between negative and positive preferences will be evident, even when they are measured separately; the correlation coefficient should approximate -1 . If, however, positive and negative preferences are two separate dimensions, rather than opposite ends of a single dimension, then positive and negative preferences will not be inversely related when measured separately; the degree of departure from -1 serves as an estimate of the amount of contradictory preference present. Two null hypotheses were tested for the preference data: (a) that positive and negative preferences are inversely related (correlation coefficient = -1); (b) that there is no correlation between positive and negative preferences (correlation coefficient = 0). Inverse linearity requires that ρ be not significantly different from -1 and that it be significantly different from 0 . Three dimensional regression lines and the corresponding multiple correlation coefficients were also calculated to study linear trends in the relation between sociodynamic preferences (independent variables) and sociometric outcomes (dependent variable); the squared multiple correlation coefficients indicate how well the independent variables predict the dependent variable.

The relation between positive and negative preferences and the corresponding sociometric choice (dynamic geometry) was investigated by plotting the point determined by these three coordinates in the phase space (Figure 1). Positive preferences were plotted on the x axis and negative preferences on the y axis of the bidimensional phase plane (see Figure 2). The corresponding sociometric choice was plotted on the z axis, which is represented geometrically in Figure 3 and by means of symbols in Figure 4. The data obtained for each of the three criteria were plotted in this fashion for each individual subject as well as for the population as a whole. Specific types of nonlinear patterns were identified in the data by visual inspection.

Indices of accuracy of conformity of predictions of interpersonal preference were computed using the method described by Katz and Powell (1953) for binary data, as modified by Hubert and Baker (1978) to permit varying strengths of choice or levels of preference. The index of accuracy is the harmonic mean of the regression coefficients of prediction scores (the guesses each subject makes concerning how each other subject will choose her), and the actual choice made, using first one variable, then the other, as dependent. Because the prediction of each subject is matched with the actual preferences and choices of each other subject, the unit of analysis is the dyad. To detect and compare the amount of perceptual accuracy subjects were able to achieve regarding sociometric choice and sociodynamic preferences, we categorized the preference data in the four classes described above. When either a choice or a prediction was missing, the data

were omitted from the analysis. To determine whether the observed proportion of accurate predictions was significantly different from chance, we applied the chi-square test. The proportion of expected accuracy by chance was one third for the sociometric method, which includes three categories, and one fourth for the four categories of sociodynamic preference. We compared the precision of the sociodynamic and the sociometric measurements of interpersonal perceptual accuracy, using Pearson's chi-square with Yates's correction, contrasting two related hypotheses: (a) that preferences would be more predictable than choices, because when preferences are indifferent or contradictory, choices become unpredictable; (b) that the difference between the metric and dynamic measurements would be greatest for criteria eliciting indifference, and contradictory preference (shown by nonlinearity in the preference plane).

Results

The number of positive, neutral, and negative responses differed for both choices and preferences in a manner consistent with our prediction that the work criterion is least threatening and the intimacy the most threatening (see Table 1). The work and pleasure criteria elicited more positive responses, whereas the intimacy criterion elicited more negative responses. The intimacy criterion produced a bimodal distribution, indicating a bifurcation between choices and rejections, both of which outnumbered neutral cases for this criterion only. The work criterion allowed the coexistence of high negative and high positive preferences.

Regression Analysis of Opposing Preferences and Choice

Positive and negative preferences were negatively correlated for all three criteria, but only the intimacy criterion met the two conditions required for an inverse linear relationship (see Table 2). The correlation coefficient of $-.8579$ both approached -1 and was significantly different from 0. In contrast, the hypothesis that the negative and positive preferences were linearly and inversely related was rejected for both the work and the pleasure criteria. Calculation of the correlation coefficients between positive and negative preferences for each subject and each criterion (see Table 3) showed linear relations for 28 cases and nonlinear relations for 8 cases.

Three dimensional correlations between positive preferences, negative preferences, and sociometric outcomes were $.59$ for the work criterion, $.70$ for the pleasure criterion, and $.69$ for the intimacy criterion. These correlation coefficients indicate that the underlying preferences account-

TABLE 1
Comparisons of Sociodynamic Choice and Sociodynamic Preference Patterns

Categories of response	Number of choices made	Number of sociodynamic preferences made
Work totals	127	132
Choice	85	56
Rejection	2	27
Neutral	40	53
Contradictory	NA	3
Missing	5	0
Pleasure totals	129	132
Choice	78	54
Rejection	8	29
Neutral	43	49
Contradictory	NA	0
Missing	3	0
Intimacy total	126	132
Choice	39	35
Rejection	56	58
Neutral	31	38
Contradictory	NA	0
Missing	6	0

Note: To make comparisons of categorical sociometric data with interval level sociodynamic data, sociodynamic intensity scores were converted to categories.

TABLE 2
Regression Analysis of Positive and Negative Preferences in the Sociodynamic Test

Criteria	Correlation coefficient	Rho = -1		Rho = 0	
		Z score	p	Z score	p
Work	-.3139	7.78	< .001	3.57	< .001
Pleasure	-.7379	2.98	< .010	8.38	< .001
Intimacy	-.8579	1.61	—	9.75	< .001

Note: $N = 132$ dyads. The null hypotheses tested were (a) that the correlation coefficient for sociodynamic positive and negative preferences (rho) would equal -1 (one-tailed z test), and (b) that rho would equal 0 (two-tailed z test). An inverse linear relationship was defined by a correlation coefficient not significantly different from -1 and significantly different from 0 ($p < .05$).

TABLE 3
Differential Occurrence of Linear and Nonlinear Patterns for
Each of the Three Criteria

Criteria	Tridimensional linear trend*	Nonlinear trend in preference plane*	Nonlinear patterns		Total with nonlinear trend
			Overlap of choices and rejections for the same preference coordinates	All choices or all rejections regardless of preference coordinates	
Work	5	3	3	3	7
Pleasure	5	3	4	3	7
Intimacy	7	2	2	2	5
Total	17	8	9	8	19

Note: The data derive from the phase space portraits for each subject (illustrated by the example presented in Figure 2); $N = 36$ (12 subjects, 3 criteria).

*Linearity was defined by a correlation coefficient not significantly different from -1 (one-tailed t test) and significantly different from 0 (two-tailed t test) at $p < .05$.

ed for only a moderate percentage of the sociometric choices: 35% for work, 50% for pleasure, and 47% for intimacy. Three-dimensional linear inverse correlations were obtained in only 7 subjects for the work criterion, 6 subjects for the pleasure criterion, and 8 subjects for the intimacy criterion. In order to analyze the data, we must therefore turn to methods that do not presuppose linearity.

Dynamic Geometry

Phase space plots of positive preferences, negative preferences, and sociometric outcome provided a visual comparison of linear versus bifurcation models. Presuming that choices and rejections are a linear function of the underlying preferences, one would expect a tridimensional linear regression line extending from first choice, resulting from strong positive and weak negative preferences, to rejections, resulting from weak positive and strong negative preferences, and including neutrality in the middle of the linear continuum.

In Figure 4, the three distinct phase space portraits obtained from one subject for each of the three sociometric criteria appear; intensities in the z axis are represented by symbols (defined in Figure 3) rather than as a third geometrical dimension. The data clearly did not satisfy the linear model re-

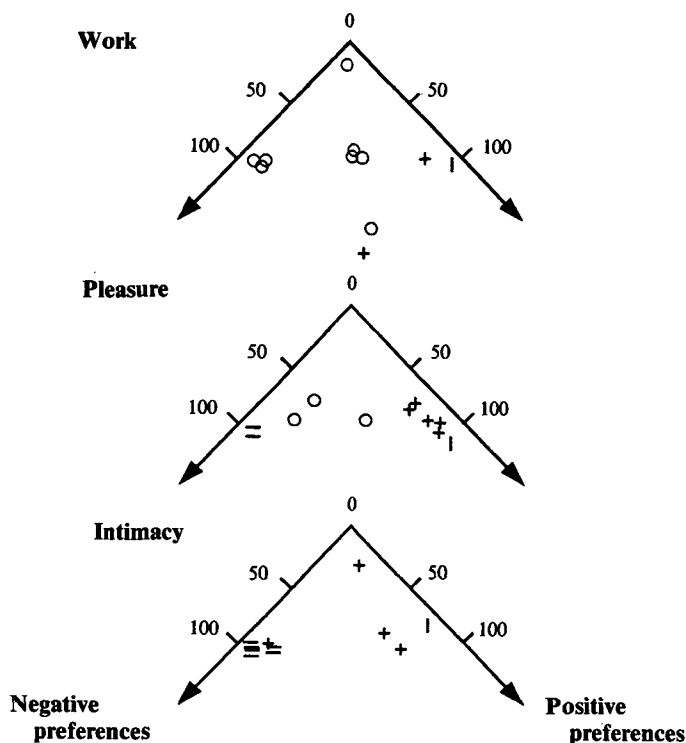


FIGURE 4. Sociodynamic Phase Space Portraits Obtained From One Subject for Each of the Three Sociometric Criteria

Positive and negative preference scores are plotted on the horizontal phase plane. The corresponding sociometric choice, instead of being plotted on the vertical axis, is represented by symbols, as in Figures 1-3.

Top: The Work criterion data present a nonlinear pattern, indicating the coexistence of positive and negative preferences. For instance, one positive and one neutral sociometric choice correspond to preference scores that are high in both the negative and positive axes (contradictory area). This subject rejected no one, even though indicating a strong negative preference, showing a high degree of tolerance, probably accounted for by the non-threatening character of the work activity.

Middle: The Pleasure criterion data indicate a linear pattern in the phase plane as well as in the tridimensional space. This suggests that this subject does not experience a contradiction between positive and negative preferences. For this criterion, this subject also has a high tolerance because she indicated neutrality, even when her positive preference intensity score was low (20) and the negative preference score was high (75).

Bottom: The Intimacy criterion data appear to be largely linear except for the coexistence of one choice among rejections. This could be an example of a catastrophe resulting from a contradiction.

quired for the use of metric analysis in the case of the work criterion (Figure 4, top); the underlying preferences accounted for only 57% of sociometric outcomes (squared multiple correlation coefficient).

Only 17 of the 36 phase space portraits were linear. The data points were linear for all three criteria in only 2 of the subjects. For all but one subject, nevertheless, at least one criterion provided linear data. Three distinct types of nonlinearity were observed in our population: (a) In 8 cases, phase plane portraits of the positive and negative preferences showed that the data did not fit a straight line (as in Figure 4, middle) but rather the points scattered over the plane in a manner grossly nonlinear to the naked eye (Figure 4, top). (b) In 9 instances, subjects chose, rejected, or remained neutral toward others while assigning to them the same preference coordinates (as illustrated for one choice and multiple rejections in Figure 4, bottom). This pattern of overlap of opposing choices with the same underlying preferences is represented by the fold of Figure 3. (c) In 8 cases, the subjects accepted all other group members, even though they had a great deal of variance in the intensities of positive and negative preference

TABLE 4
Comparison Between the Measurements of Choice and Preference Regarding Accuracy of Predictions

Criteria by test	<i>n</i>	Number of accurate predictions	Accuracy conformity measuring accuracy	Accuracy text vs. chance (chi-square)	Index choice vs. preference (chi-square)
Work					
Choice	112	47	.0228	3.76*	
Preference	132	62	.3143	33.99***	36.22***
Pleasure					
Choice	101	46	.1118	6.81**	
Preference	132	68	.3137	49.42***	54.37***
Intimacy					
Choice	105	44	.2179	3.50*	
Preference	132	55	.3250	19.54***	21.80***

Note: The subject's prediction of others' choices and preferences toward self are compared with the actual choices and preferences stated by the other. To make comparisons with categorical choices, the preference data were converted to categories. Accuracy, by chance alone, would be expected to be 33.3% on predictions of choices and 25% on predictions of preferences; *n* is the number of cases (dyads) in which predictions were made regarding available choices and preferences.

*Significant at $p < .050$; **significant at $p < .010$; ***significant at $p < .001$.

scores; 2 subjects made no choices for the intimacy criteria but considered all subjects as neutral or rejected—a nonlinear pattern.

Marked differences appeared in the phase space portraits between criteria in the relative intensity of positive and negative differences leading to choice or rejection for most of the subjects (see Figure 4). In most cases, a small degree of negative preference led to rejection in the case of intimacy and a high degree of negative preference was tolerated regarding the work criterion, so the choice was weakly positive or neutral. On all three criteria, sociometric choices, rejections, and neutrality arose from a wide variety of underlying preferences. Few responses included low intensity of positive and negative preferences. Neutral choices often arose from predominance of negative preferences. In other words, what was reported in the sociometric test as neutral often had high-intensity negative preference scores. These data are at variance with the linear assumption that sociometric neutrality would be observed whenever roughly matched positive and negative preferences neutralize each other, regardless of their absolute intensity.

Negative preferences were more frequent than rejections for the work and the pleasure criteria (Table 1). Strongly negative preferences paired with weakly positive ones often accompanied neutrality in the sociometric test (see Figure 4, middle). The two tests also differed significantly in the number of omissions. Subjects failed to make 14 sociometric choices and 78 sociometric predictions. There were no omissions in the sociodynamic data. These observations suggest that negative preferences were more easily expressed than outright rejections. Phase space portraits did not reveal a significant pattern regarding the 14 omitted sociometric choices, which were observed with high or low positive and negative preferences.

Prediction of Choices by Others

The experimental subjects were more accurate in predicting the preferences and choices made by others regarding themselves than could be expected by chance. The index of conformity was greater for the sociodynamic measurement than for the sociometric test for every criteria. The differences between metric and dynamic measurements were statistically significant (Table 4). Accuracy indices for the sociometric test were low and decreased from 0.22 to 0.02 as the criterion's threat increased. In contrast, the sociodynamic measure engendered equal accuracy regarding all three criteria (accuracy indices between 0.31 to 0.33), presumably reflecting the greater precision added by consideration of contradictory cases.

Discussion

These empirical observations highlight the importance of contradictory preferences that may underlie choice. When given the opportunity

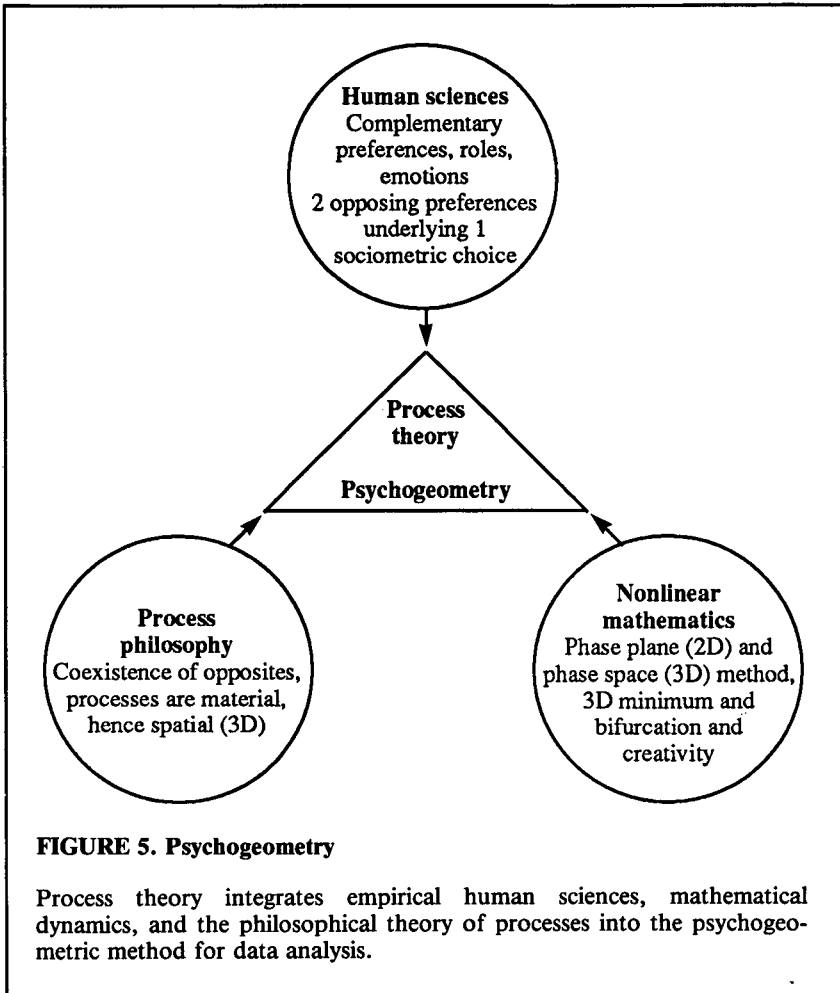
to express separately their positive and negative feelings and emotions regarding a particular choice, the subjects were able to do so in spite of the pervasive tendency to think of opposites as mutually exclusive polarities. Such widespread attitudes must have biased our data against the process hypothesis.

The clinical observations suggest that the measurement of opposing preferences is meaningful and practical. The experimental study indicates shortcomings of the linear assumptions imposed by the metric method. Regression analysis indicates that opposing preferences can co-exist rather than neutralize each other. Positive and negative preferences are inversely related for some criteria for some of the subjects, but often they are not linearly related, and one therefore needs to collect data in a way that allows for differentiation between these cases. The data show that to consider the choice-making process as a continuum along a linear dimension is an error in measurement. In the context of both clinical psychodynamics and process theory, it is a crucial distortion of the data because it obscures the coexistence of opposing feelings and drives.

The coexistence of contradictory preferences appears to be relevant because measuring the intensity of each opposite pole separately rather than eliciting choices enhances the subjects' accuracy in predicting others' choices. The work criterion, which includes more contradictory preferences, also has the greatest differential between the indices of accuracy for the two tests. In contrast, when contradiction is not apparent, and when individuals know clearly whom they will choose and not choose, then subjects should have approximately the same accuracy on both test forms. The response to the intimacy question provides such a picture. Taken together, these findings suggest that the heightened prediction of the sociodynamic measurement may be related to its unique ability to reveal the contradictory preferences underlying choices, even in cases that are not overtly ambivalent. The perceptual accuracy scores of individuals taking the standard sociometric test, on the other hand, are lowered by the inability of the test to measure contradictory preference. The importance of this is twofold. By bringing conflictual preference into the domain of observables, the sociodynamic measurement (a) encourages group members to express their choices and predictions with more clarity and (b) makes information not previously accessible available for statistical and dynamic analysis. This indicates the validity of the preference scores.

Further deviations from the linear model were observed in tridimensional phase portraits (Table 3), indicating that the dichotomy of choice or rejection is a complex process with thresholds that vary from subject to subject and from criterion to criterion, rather than an additive (linear) function of the underlying reasons and feelings. Rejecting the linear

model leads one to search for alternatives. Choice is, by definition, a dichotomous situation for which the concepts of bifurcation and catastrophe may offer a suitable model. When a subject experiences opposite drives simultaneously, these opposites do not cancel each other. One or the other predominates, or they may alternate and intertwine. The alternative predominance of the two opposites was most clearly observed in action as subjects with strong positive and negative preferences toward another actually walked their ambivalence, back and forth, between the poles of the *V*—the horns of their dilemma. Or the subject chose or rejected the all-or-none fashion of a catastrophe. The highly threatening intimacy criterion appears to evoke such a pattern. Nevertheless, the patterns observed were very complex and did not readily fit simple catastrophe models. Callahan and Sashin (1987) have developed more complex models, such as a double catastrophe, to describe the fight-or-flight bifurcation. Our data clearly indicated that in many subjects, different criteria elicit different patterns of choosing and that different subjects differ in their response to any one criterion. This type of uniqueness is characteristic of nonlinear processes and indicates that phase space portraits are more likely to provide meaningful insights than statistical methods that tend to obscure unique patterns by grouping the data. Regardless of the particular model that applies to each criterion and subject, we understand bifurcation theory to provide two fundamental guidelines. First, it demonstrates that the model must be tridimensional because lower dimensional processes are always deterministic, either linear (unidimensional) or cyclic (bidimensional). Only in three-dimensional processes are bifurcations, and hence choices, possible. Second, the concept of bifurcation indicates that even the catastrophic separation of opposing behaviors represents the surface appearance of a deeper coexistence of opposing drives (the union of opposites). The bidimensional phase plane provides a practical manner in which to apply this principle in empirical research, and empirical psychological studies indicate that the union of opposites is a pattern of psychological processes demonstrable by statistical data. The tridimensional feature of processes is reflected in the complex of opposing preferences and unique choices in sociometry, portrayed by the tridimensional phase space of dynamics, and postulated by process theory as universal law: All processes are material, that is to say, spatial and hence tridimensional (Sabelli, 1989). These dyadic and triadic constructs illustrate how process theory combines empirical human science, dynamic geometry, and process philosophy into a single method (Figure 5), which we have named psychogeometry (Carlson-Sabelli, Sabelli, Hein, & Javaid, 1990). The term *geometry*, referring to the measurement of material bodies, seems appropriate because proc-



ess theory adds a third law of tridimensionality to already known laws regarding the unidimensional tendency of energy toward equilibrium and the coexistence of opposing forces in all processes. With this approach, we have obtained evidence to support the conflict theory of depression (Carlson-Sabelli, Sabelli, Hein, & Javaid, 1990; Sabelli & Carlson-Sabelli, 1991).

Successful here, the method of measuring both opposites may also be applied to the other instruments that measure oppositions in an either-or-manner or as a continuum along a linear dimension. The Rotter Internal/External Locus of Control Scale, for example, has been improved in just

this way (Wallston, Wallston, Smith, & Dobbins, 1987). Similarly, Bem (1974) developed the Bem Sex-Role Inventory (BSRI) to overcome the built-in bias of other commonly used scales, such as the masculinity-femininity scale of the California Psychological Inventory (Gough, 1957), that assume an inverse relationship between masculinity and femininity. By measuring masculinity separately from femininity, rather than as the two poles of a single continuum, the BSRI is able to identify the extent to which all individuals are androgynous, having both feminine and masculine traits, as proposed by Weininger in 1903, and later by Freud and Jung (Sulloway, 1979, pp. 183–184). Although the process theory concept of the union of opposites was not the impetus for these particular cases, it could be for others. Applying the concept of the union of opposites to the Myers-Briggs test, for example, one would measure each opposite separately, thereby distinguishing personalities who are high in the capacity to “sense and to think,” to “judge and to perceive,” etc., from those personalities low in both or high in one or the other.

In our clinical experience, the bidimensional framework is practical and illuminating; the present experiments validate its use. Our goal has been to consider that processes of choice actually evolve through the interaction of coexisting and opposing preferences. This coexistence of opposites is obscured by sociometric scales that force the data into an inverse linear relationship.

The concept of the union of opposites from process theory, a new perspective in psychiatry, serves as a conceptual framework to identify a problem that limits the validity of commonly used methods of measurement. It also suggests a solution that provides a new nonlinear method for data collection and analysis that makes it possible to reveal the union of opposites in empirical data and incorporates mathematical methods considered at the forefront of modern scientific research in a wide variety of areas. It can thus be useful in sociometry, psychological testing, and, more generally, in psychodynamics.

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Note Added at Proof: The research described above has been continued by the authors (Carlson-Sabelli et al., 1991 a, b; Carlson-Sabelli, 1992). It was found that indeed the distribution of choices and rejections is best described by one or another of Thom's elementary catastrophes. The simpler catastrophes are described by two parameters called asymmetric and bifurcating because of their properties. It was discovered that the asymmetric and bifurcating parameters of the sociodynamic catastrophes could be formulated in terms of opposites (P = positive force or attraction; N = negative force of repulsion). The asymmetric parameter is the difference between these opposite forces, $f(P - N)$, while the bifurcating parameter is their

sum $f(P + N)$. Conceptually, the asymmetric parameter denotes the direction and intensity of the dominant force while the bifurcating parameter represents the combined intensity contributed to the process by both forces. This is illustrated in figure 3 of this article. This discovery provides a conceptual link between the concepts of mathematical dynamics and those of process theory. Modern mathematical dynamics offers methods for studying patterns in complex processes through plotting trajectories of change in a few variables, but does not offer guidance on which variables to select. Process theory prescribes that the variables of interest are the opposite forces co-existing in the process.

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The Effect of Structured Feedback on Goal Attainment, Attraction to the Group, and Satisfaction With the Group in Small Group Counseling

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ABSTRACT. Recent literature examines the effects of goal attainment, cohesion, and feedback in group counseling, but relatively little work examines the direct effects of structured feedback on goal attainment. Fifty-one clients participated in a 6-week small group counseling experience. Clients in the experimental condition set goals and participated in structured feedback exercises at the end of each session. Clients in the control condition set goals but did not participate in structured feedback exercises. At the last session, members completed the attraction scale and the reflective questionnaire and assessed their own and other members' level of goal attainment. The results indicated a significant relationship between participation in structured feedback exercises and goal attainment.

MUCH RESEARCH on the effectiveness of group therapy relates positive outcome to such variables as goal setting, cohesion, the precursors to cohesion of self-disclosure, and feedback. That goal setting has a positive effect on achievement and performance has been well established in the literature. Wing (1990, p. 119) states that "the importance of goal setting in performance seems inarguable." The benefits of goal setting in industrial settings include higher productivity, fewer injuries, lower absenteeism, and improvement in performance (Latham & Baldes, 1975; Latham & Kinne, 1974; Ronan, Latham, & Kinne, 1973). Kim and Hamner (1976) studied the combined effect on goal attainment of setting goals and receiving feedback. They found that this combination is superior to goal setting alone on improving performance and on measures of cost and safety in an industrial setting.

Scholars have also studied goal attainment from a mental health perspective. Childers (1987, p. 362) identified goal setting as "the central

point of the counseling process," and Hart (1978) found that patients who set goals and reported on their progress during weekly therapy sessions showed greater success than those patients who received therapy but had not set goals. Two studies of group counseling suggest that appropriate goal setting enables members to enhance their group experience. Flowers and Schwartz (1980) reported on a successful goal-setting procedure: At the beginning of the sessions, group members listed on an index card two problems on which they wanted to work. These researchers found that participation of group members who completed the exercise increased more than did participation of those who did not. Kivlighan and Jauquet (1990) examined the relationship between session quality and how group members approached the session. They found that when group members set realistic goals early in the course of the session, group members seemed to be more involved in productive work.

Cohesion is another variable that has been repeatedly linked with achievement and positive outcome. Rogers (1961) likened attraction to the group, or cohesiveness, to the "relationship" in individual therapy and maintained that it is fundamental to the therapeutic process. Wheelless, Wheelless, and Dickson-Markman (1982) found significant correlations between group solidarity and goal attainment, group satisfaction, and quality of interaction. In 1986, Wright and Duncan reported that measures of attraction to group as well as measures of cohesion were related to self-reports of individual outcome. Earlier, Stockton, Barr, and Klein (1981) indicated that such negative outcomes as premature termination occurred in groups in which cohesiveness did not develop adequately.

Many researchers, however, feel that cohesion is not an end in itself but is a factor that mediates other intervening outcome variables. Yalom (1975, p. 53) stated that "increased group cohesiveness produces many results that may be considered as intervening therapy outcome factors." Among these factors, he listed better attendance, increased participation, and greater influenceability.

The development of cohesion in groups has been thought to be influenced by a number of factors. Bednar, Melnick, and Kaul (1974) viewed risk-taking behaviors (behaviors with such uncertain consequences as self-disclosure and interpersonal feedback) as precursors to cohesion. Stokes, Fuehrer, and Childs (1983) concluded that groups in which members made disclosures about intimate topics appeared to be more cohesive than those in which members' disclosures dealt with less intimate matters. In addition, they reported a curvilinear relationship between cohesion and risk-taking, indicating that too much self-disclosure too soon could be detrimental to the formation of cohesion. Both Bednar et al. (1974) and Stokes et al. (1983) suggested that self-disclosure is more desirable early in the life of the group, whereas later interpersonal feedback among members is more beneficial because it is riskier.

Feedback is an important variable that leads to the development of cohesion. Bednar and Kaul (1978, p. 804) reported that "it has been commonly accepted that the exchange of personal impressions among individuals committed to candid and responsible communication may constitute one of the most powerful facets of group treatment." Extensive research has showed the effectiveness of feedback on outcome (Hart, 1978; Kolb, Winter, & Berlew, 1968; Myers, Myers, Goldberg, & Welch, 1969; Soeken, Manderscheid, Flatter, & Silbergeld, 1981). Much research, thereupon, has considered the various elements of feedback and their usefulness in the counseling process. Positive feedback is generally more readily accepted than negative feedback (Lundgren & Schaeffer, 1976; Morran, Robison, & Stockton, 1985; Robison, Morran, & Stockton, 1986; Schai-ble, 1970; Schaible & Jacobs, 1975). It is also found to be more desirable and to have more impact (Martin & Jacobs, 1980; Morran & Stockton, 1980; Robison et al., 1986), be more credible (Martin & Jacobs, 1980; Robison et al., 1986), be more accurate (Epperson, 1979; Martin & Jacobs, 1980; Morran et al., 1985), and be of higher message content quality (Morran et al., 1985). Positive-negative sequences have been shown to be superior to those that are negative-positive (Jacobs, 1974; Rose & Bednar, 1980), and immediate feedback to be superior to delayed feedback (Benne, Bradford, & Lippitt, 1964; Hansen, Warner, & Smith, 1976; Schein & Bennis, 1965). Some efforts have sought to link acceptance of feedback to personality variables, and there is some support for the thesis that members with high self-concept scores find negative feedback more desirable than members with scores lower on self-concept (Morran & Stockton, 1980). There has been no support, however, for the idea that acceptance of feedback is related to defensiveness (Robison et al., 1986).

Although many studies have provided information about valence and other elements specific to the giving of feedback, relatively little work has examined the direct effects of structured feedback upon goal attainment. Our study, therefore, was designed to examine the effects of structured feedback in a group counseling setting on group members' levels of goal attainment, levels of attraction to the group, and on satisfaction with the group experience. We hypothesized that group members who experienced structured feedback exercises as part of their group experience would attain their goals to a significantly greater degree, would be more attracted to the group, and would be more satisfied with their group experience than would members who did not have structured feedback.

Methods

Subjects

The sample consisted of 51 university students and community residents who requested group counseling at the center affiliated with the Depart-

ment of Counseling and Educational Psychology at a large midwestern university. The sample consisted of 29 women and 22 men who were from 19 to 45 years old.

Instrumentation

Clients were assisted in choosing their goals for counseling through the use of a survey that listed 20 items group members often mention or choose as issues they would like to work on in counseling. Space was also provided for additional goals. Clients indicated how much or how little each of the items was an issue for them and then chose the three goals that they viewed as most important to them.

Each client's goals from the survey were listed on a sheet of paper and rated according to how well each member achieved the goal. The achievement rating was based on a 6-point Likert format, as follows: (1) this person is much farther away from attaining this goal, (2) this person is a little farther away from attaining this goal, (3) this person has experienced little or no success in attaining this goal, (4) this person has had a moderate amount of success in attaining this goal, (5) this person has experienced a great deal of success in attaining this goal, (6) this person completely attained the desired goal.

We used the attraction scale to measure cohesion or attraction to the group. Clients responded to 14 items in a Likert format. We obtained a reliability coefficient of .89 (internal consistency) for the 51 subjects in this study.

To measure satisfaction with the group experience, we used the reflective questionnaire, which consisted of 21 items in a Likert format. On this measure, we obtained a reliability coefficient of .90 (internal consistency) for the 51 subjects.

Procedures

Each subject participated in a 30-minute intake interview before the group experience. The subject was informed about the general nature of the research and gave his or her consent. Subjects were then randomly assigned to either the feedback condition or the control condition, with six groups in each treatment condition. Pairs of advanced graduate students in the Department of Counseling and Educational Psychology were co-leaders of the groups. All group leaders were enrolled in a group leadership course and received feedback from an advanced doctoral student after each group session. During the first group session, participants began their

group experience by completing the goal-setting survey and identifying their most important goals. After completing the survey, all group members shared their goals with the other members in their group. All then participated in the same basic small group counseling experience, with the following deviations.

Participants in the feedback condition restated their goals orally at the beginning of every subsequent session. Leaders provided the group members with a typed list that indicated the three goals they had selected on the first evening. Members also participated in a structured feedback exercise during the last 20 minutes of every group session. Each member received one piece of positive feedback and one piece of corrective feedback about what he or she had done in that session to help or hinder attainment of individual goals. Either the leaders or two randomly selected group members provided the feedback.

Members in the control condition participated in exactly the same counseling experience, except that they did not end their session with a structured feedback exercise.

At the beginning of the last session, all members in all groups completed the Likert scales to assess how well they had achieved their preset goals. Participants did a self-rating and also rated every member in their group. Group leaders also rated each participant. Group members in all conditions completed the attraction scale and the reflective questionnaire. The total experience consisted of six 2-hour sessions for each group.

Results

With limited variability among the goal attainment ratings, we could not use a parametric procedure to analyze the data (the assumptions for parametric statistics were not met). We therefore dichotomized the data and used a nonparametric statistic. We classified clients with composite goal attainment scores of 3.50 and above as having attained their goals, and those with composite goal attainment scores below 3.50 as not having attained their goals.

Results indicated a significant relationship existed between type of treatment and goal attainment for self-rated goal attainment and member-rated goal attainment (both $p < .04$, Fischer's exact test), but we found no significant relationship for leader-rated goal attainment.

For attraction to group or satisfaction with the group experience, we found no significant differences between the experimental and the control conditions.

Discussion

The results we obtained provided support for the hypotheses that structured feedback contributes to client goal attainment in small group therapy. There was a significant relationship between participating in a group that incorporated structured feedback exercises and achieving stated goals. This is consistent with Hart (1978), who showed that subjects who set goals and monitored them at each therapy session showed greater success in attaining their goals than did subjects who did not monitor their goals weekly, and with Stockton and Morran (1984), who indicated that the development of cohesion and risk taking is facilitated by incorporating structure into the initial meetings of the group.

It is interesting that there were no differences between groups on leader-rated goal attainment. This may be because it would have been difficult for counselors in training to know whether their clients had not benefited from the group experience. Further research is needed to assess the perceptions of more-experienced group leaders.

We had also hypothesized that subjects in the structured feedback conditions would be both more attracted to the group and more satisfied with the group experience. Results, however, indicated no significant differences between the two treatment conditions for either attraction or satisfaction. This could be because attraction and satisfaction are dimensions based on factors completely independent of goal setting or receiving feedback. Such other curative factors as altruism, universality, or catharsis may be the precursors to attraction to the group and satisfaction with it, and attraction and satisfaction may be unaffected by short, structured feedback sessions. It is also possible that 6 weeks may not have been long enough for large variations in levels of satisfaction or attraction to develop. With groups of longer duration and the subsequent development of group stages, differences in attraction to and satisfaction with the group may be detectable.

This study provided support for the use of structured feedback exercises in small group counseling. Incorporating short feedback exercises may provide an effective intervention that affects group members' attainment of goals. For maximum therapeutic benefit, group leaders who incorporate these exercises should do so in the context of the research reviewed in this article. Further study should analyze on-going groups rather than those limited to 6 weeks. This would help determine whether time and the stage of group development are mediating factors in the effectiveness of structured feedback sessions in encouraging attraction to the group and satisfaction with the group experience. Last, participants in the feedback condition in this study received feedback from others in

the group (either other members or group leaders). We need additional research in which the members themselves talk about what they have or have not done in the group (an internal rather than external process). This may have a different impact on goal attainment than receiving feedback has because it requires a different level of processing and taking responsibility for members' activities in the group.

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The Potential Abuses, Limitations, and Negative Effects of Classical Psychodramatic Techniques in Group Counseling

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ABSTRACT. To be effective in group counseling, a psychodramatist must be highly knowledgeable, experienced, and well trained. The impact of inappropriately applied psychodramatic techniques implemented by inept or inadequately trained psychodramatists can be damaging to clients' mental health, especially those clients who are emotionally vulnerable. This article, the result of both a review of literature and personal observations, illustrates some of the pitfalls of classical psychodrama and seeks to prevent psychotherapists from abusing or misusing psychodramatic techniques.

CONSIDER SHAKESPEARE'S WORDS in *As You Like It*: "All the world's a stage, And all the men and women merely players: They have their exits and their entrances; And one man in his time plays many parts, . . ." (2.7.139-142). J. L. Moreno, founder and developer of psychodrama, could have quoted Shakespeare in defining his action-oriented, drama-based therapeutic approach. To Moreno, throughout real life (the world's stage), people (players) assume (perform) a variety of roles (parts).

In therapeutic settings, however, it is the psychodramatists who are responsible for helping their clients "play out" their roles to accomplish positive or constructive outcomes. To be an effective psychodramatist requires that one have a considerable amount of knowledge, expertise, and practical experience. In group counseling, the impact of inept, inadequately trained psychodramatists or their inappropriate application of psychodramatic techniques can be harmful to clients, especially to those who are emotionally vulnerable. Practitioners, therefore, need to be keenly aware of the pitfalls of this powerful and intense action approach to therapy. In illustrating classical psychodrama's potential abuses, limi-

tations, and negative effects on clients, I would like to offer an informational alert and warning signal to prevent therapists from future misuse of psychodramatic techniques.

Setting the Stage

Moreno founded psychodrama in the early 1920s, basing it on his earlier work in psychotherapy, improvisational theater, and sociometry. He defined classical psychodrama as "the science which explores the 'truth' by dramatic methods" (cited in Fox, 1987, p. 13). Moreno believed that "creativity and spontaneity affect the very roots of vitality and spiritual development, and thus affect our involvements in every sphere of our lives" (cited in Blatner, 1973, p. vi).

In other words, over-intellectualization of our repressive society has robbed us of our playful "spirit of childhood" (p. 2). We neglect our "creativity, spontaneity, drama, horror, playfulness, ritual, dance, body movement, physical contact, fantasy, music and nonverbal communication" (p. 2). Classical psychodramatic techniques can restore opportunities to express these characteristics as we explore and attempt to solve personal problems.

Davies (1987) agrees with Moreno that classical psychodrama "represents the first organised application of dramatic action to the solution of interpersonal problems and to the growth of individual—or group—awareness" (p. 105). Moreover, Davies continues, in addition to the idea that Moreno was "deeply concerned with the philosophical and spiritual roots of our social being" (p. 105), he viewed the human condition as a struggle to establish a balance between our spontaneous side (our creative urge toward self-expression, play, and experimentation) and our institutional side (our position within the social matrix or social atom). For example, Moreno felt that excessive spontaneity could lead to "personal or social distintegration . . ." but "a pathological suppression of spontaneity could cause damage by its inflexibility and dehumanizing rejection of all that is most sensitive, creative, and adaptive in us" (p. 105).

Moreno did not believe that classical psychodrama was totally divorced from the psychoanalytic method. He explored the conscious and unconscious within a social context. It is active exploration, however, not description and interpretation, that is the main focus of classical psychodrama (Davies, 1987). For example, the distant relationship between the therapist and client in developing and interpreting transference in psychoanalysis is not a characteristic of classical psychodrama. In classical psychodrama, the aim is to create a "therapeutic alliance" (p. 112),

or tele, between the therapist and the client to encourage more risk taking and self-disclosure.

Moreno saw "the deeper representational, social-psychological nature of the dramatic experience" (Landy, 1986, p. 29). By applying role playing, for example, to psychotherapeutic practice, psychotherapy became, in a sense, a dramatic technique with a scene (i.e., enactment), a director (i.e., therapist), a protagonist (i.e., client), an audience (i.e., group members), and a stage (i.e., location of enactment). As in Gestalt and other existential theories of psychotherapy, the focus is on the here and now and creative spontaneity, and "drama is the central rather than the peripheral element of therapy" (p. 29).

Potential Abuses and Limitations of Psychodrama

Regardless of Moreno's intentions, the following information illustrates several examples of negative effects of classical psychodrama that diminish its impact as a powerful tool to facilitate perceptual and behavioral change in clients.

Lack of Empirical Evidence

Kellermann (1987) admits that "practitioners of psychodrama traditionally rely more on clinical experience than on experimental research data when advocating the effectiveness of this method. As a consequence, psychodrama literature mostly includes descriptive rather than empirical studies" (p. 459). Although he gives no explanation of why this is so, Kellermann notes that "the tests that were specifically designed by Moreno and his students to measure psychodrama, such as spontaneity and creativity tests, role tests, social atoms, and other action tests, are almost nonexistent in the literature of experimental research" (p. 467).

With regard to validation, Moreno (1968) defended the idea that "the validity of psychodrama does not require proof beyond its face value" (p. 3). To him, honest client reporting and careful observation by the therapist were sufficient proof of reliability and validity. He claimed that further validation was unnecessary as long as therapists and their clients were not predicting future events.

Moreno (1968) maintained that "one can state with certainty that what matters is that the actions and decisions are valid for the participants themselves at the time when they are experienced" (p. 3). In its here-and-now context, classical psychodrama explores the past, present, and future to increase awareness and establish options. Real-life outcomes, however, cannot always be correctly anticipated. Unexpected events hap-

pen; therefore, clients should not live with false expectations because of unpredictable therapeutic outcomes.

It appears also that Moreno conveniently chose qualitative over quantitative measurement despite Kellermann's (1987) claim that quantitative tests for psychodrama existed at one time. Blatner (1973) admits that "rigorous theoretical and empirical research" and the "validation of properly-controlled outcome studies" (p. 25) in psychodrama are lacking.

Unsuitability of Population

Moreno viewed classical psychodrama as having universal appeal and applicability. He did not want psychodrama to become "a limited activity, a highly specialized therapy available only to selected groups in certain conditions" (Davies, 1987, p. 110). Too much universality, he felt, might diffuse and decrease classical psychodrama's viability as a significant psychotherapeutic technique once its principles had been scrutinized more closely by researchers and practitioners.

Corey (1985) cites several psychodrama experts (e.g., Blatner, Leveton, and Moreno and Elefthery) who suggest that "psychodrama should be used very carefully, if at all, with acting-out individuals, with a seriously disturbed population, or with a sociopathic population" (p. 211).

In his summary of the outcomes of 23 studies related to empirical classical psychodrama research that were carried out between 1952 and 1983, Kellermann (1987) discussed only three variables of the many that affect outcome. According to Kellermann, some practitioners believe that classical psychodrama is an appropriate therapeutic approach for all mental disorders. Other practitioners feel, however, that classical psychodrama is appropriate only for "those who are able to enter into the complex . . . psychic rituals of the psychodramatic setup" (p. 464). For some clients, the physical and emotional catharsis during psychodramatic enactment can be too draining—especially if the director/therapist is not expert, the closure is mishandled, and no insight is gained.

Kellermann's (1987) findings support classical psychodrama as a "valid alternative to other therapeutic approaches, primarily in promoting behavior change with adjustment, antisocial, and related disorders" (p. 467). He suggests, however, that the empirical evidence is too incomplete to determine population suitability conclusively.

All psychotherapists, regardless of their therapeutic approach, should consider population suitability in group counseling situations. Classical psychodrama, however, seems to call for extra attention to population suitability because of its complex dramatic nature, its intensity, and the active emotional *and* physical participation of clients.

Inadequately Trained or Skilled Psychodramatists

Corey (1985) insists that "it is essential that the director [of a classical psychodrama] have theoretical, technical, and practical knowledge of psychodramatic technique" (p. 210). Langley and Langley (1983) describe psychodrama as a complex method; therefore, "adequate training is imperative," and "until the structure has become a part of us, we cannot use it to its maximum effect" (p. 20).

Consequently, practitioners are inadequately trained if they do not go through the rigorous procedures of establishing a theoretical base of knowledge regarding group process and dynamics, psychology, personality, therapeutic processes, and drama. In addition to this knowledge base, a practitioner should have extensive experience, under training conditions, as an observer of, a participant in, a monitored and, finally, a solo leader of classical psychodrama group sessions.

I suspect that some practitioners attend one or two psychodrama sessions at professional conferences and then, in their eagerness, adopt psychodramatic techniques into their private practices without gaining any further knowledge about (or experience with) the method. This behavior violates the ethical code regarding expertise—practitioners should never engage in special areas for which they are not trained and do not have credentials.

Sometimes, the inadequately trained psychodramatist who does not understand the entire classical psychodramatic process is likely to become disorganized. The psychodramatic session, therefore, could become fragmented and clients could become confused about their roles and how they fit into the process. Meanwhile, the practitioner tries to juggle the therapeutic and the dramatic components at the same time and runs the risk of failure.

Moreno might have had the ability "to judge the capacity of the protagonist to move into sensitive areas successfully allowing him to work at depth, often with little previous knowledge of the individuals involved [in a classical psychodrama] and even in public sessions" (Davies, 1987, p. 112). The inadequacies of other psychodramatists, however, could be more detrimental to the client than the effect of the techniques themselves. Blatner (1973) therefore recommends that the practitioner "build a broad armamentarium of skills" developed with "humility and commitment . . . and a depth of ability with which to apply them, for mere technique is not enough" (p. 4).

Misunderstanding of Process and Purpose

For a classical psychodramatic enactment to work, a substantial amount of trust and cohesiveness must be established between the direc-

tor and the group. The building of trust and cohesiveness is not an instantaneous process and, in fact, can take a long time. A warm-up session or two seems inadequate to form the strong bonds necessary if directors are to be entrusted with the very hearts and souls of protagonists and other group members.

Sometimes, the complex psychodramatic process becomes the end rather than the means in counseling. The therapist, protagonist, auxiliaries, and audience become too caught up in a complicated process from which they are unable to derive substantial benefit. In other words, the director and participants become more involved in the intricacies of the drama than in the process of a therapy that includes dramatic techniques.

Some practitioners confuse classical psychodrama with psychodramatic activities that now have other names and purposes. Thus, although some educational drama activities are derived from psychodrama techniques, their intention or purpose is nontherapeutic. For example, Pearson-Davis (1989) used role playing and other psychodramatic techniques as part of her developmental drama experience with mentally challenged adolescents.

Misuse of Technique

Even though Yablonsky (1968) notes that the psychodramatist is a group member and a participant, as well as the group's leader, the classical psychodrama setting can create a perfect forum for directors/therapists with personality traits that are over-controlling, manipulative, and authoritarian. With such therapists, the clients are virtually a captive audience, and the psychodramatic enactment becomes the scene of countertransference, which Blatner (1973) calls "pathological spontaneity" (p. 91).

In other words, the psychodrama loses its client-centeredness when the director takes a role that is too active (e.g., determines content of the interaction rather than remaining directive in helping clients explore problems through a variety of methods). Play directors may manipulate actors to fabricate roles for the sake of art and drama, but this technique is not acceptable for the psychodrama director/therapist, whose role is therapeutic. Clearly, classical psychodrama should not become a substitute for a frustrated theatrical director or actor who unwittingly trades professional acting or directing for a helping profession.

To some practitioners, classical psychodramatic techniques appear to be simple and easy to apply. As a parallel example, some people believe that writing, acting, and directing require no special skills, talent, or theoretical knowledge base. Although experts in the field warn that training, knowledge, and extensive practical experience are essential (e.g., Blatner, Langley & Langley, Corey), some practitioners employ psychodramatic tech-

niques as if the approach is both simple and simplistic. Practitioners may also use a public forum (e.g., a professional conference session) to display intense psychodramas for their own commercial purposes. This directly violates the client-therapist relationship and confidentiality (even if the participant gives written or oral approval). Psychodrama demonstrations should be reserved for training sessions under very controlled conditions.

In the catch-all name of eclecticism, the classical psychodramatic method is sometimes used inappropriately. Therapists today may feel pressured to employ an action-method in their therapeutic approach, rather than a strictly psychoanalytic talk technique. If psychodrama happens to be the "trend of the day," then practitioners may adopt it as their "approach of the week" without considering its appropriateness or their own training, background, and experience.

The classical psychodramatic therapeutic process may provide a spontaneous, sudden, short-term breakthrough for a client (i.e., protagonist). Often, however, not enough time is spent working through and integrating what transpired in a session for the therapeutic process to have a long-term effect on the client (Corey, 1985), or directors may miscalculate the intensity of a client's problem. The director may develop an entire psychodramatic enactment, but once again short-change the amount of time available to integrate and bring to closure the emotional components of the scenario. The client (protagonist), as well as other group members, can be left with too many emotional strands exposed.

It is psychologically dangerous to leave an enactment dangling. Even if a problem or conflict has not been brought to full closure, the client must be able to function at least well enough to make it to the next session. The action of the enactment may take place so quickly that there is not sufficient time for the participants to reflect on what occurred. Parallel to this, some therapists do not provide a mechanism for follow-up of the classical psychodramatic process. Consequently, because of the director/therapist's lack of expertise, evaluation, follow-up, and follow-through are shortchanged again.

Inadequately Trained Supporting Players

Role playing is just that—playing a role. Its impact and importance as a therapeutic technique in classical psychodrama diminishes, however, if the protagonist and auxiliaries are insincere in their role portrayals. Unfortunately, honesty and sincerity are difficult to measure; thus, the purpose and outcome of a classical psychodramatic enactment can turn out to be an invalid effort. Sometimes, honesty or sincerity are not lacking, but the inexperience of the auxiliaries negatively influences enactment

outcomes. Using professional auxiliaries could remove some of the pressure of inadequate training. Trained professionals know how to respond and they are "sensitive both to the psychodramatic process and to the technical and emotional demands of acting" (Landy, 1986, p. 124).

Recommendations

The amount of research that explores classical psychodrama's limitations and abuses, especially if its techniques are inappropriately or incorrectly applied in therapy, is insufficient. Furthermore, the negative characteristics associated with classical psychodrama are not always the fault of the method or the process. They relate, instead, to the people involved in the techniques. My overall conclusions are that (a) therapists using the classical psychodramatic approach should increase the amount of empirical research by generating more quantitative and qualitative studies, and (b) the burden of responsibility for the success or failure of the classical psychodramatic method belongs primarily to the director/therapist.

My recommendations for improving the quality and quantity of future psychodrama research include the following:

1. Increase and update the number of quantitative research studies in classical psychodrama
2. Design research studies that focus on issues such as suitability of technique to population and the relationship between directors' expertise and enactment outcome
3. Eliminate, or at least diminish, limitations of measuring instruments and obtained results in quantitative studies
4. Diminish the subjectivity of measurement
5. Combine quantitative and qualitative means of measurement and evaluation of psychodramatic issues

I recommend also that (a) practitioners acquire a substantial amount of theoretical knowledge, training, and practical experience before assuming the role of psychodramatist; (b) therapists increase confidence in the psychodramatic approach by reporting more of their group experience in journals and at conferences; and (c) practitioners consider many variables, along with population suitability, before engaging in the emotionally intensive psychodramatic process.

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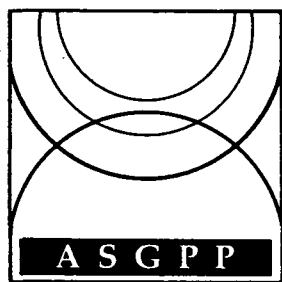
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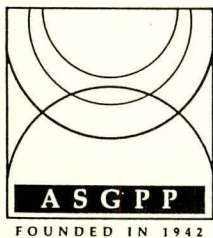
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