THE PATTERN OF FRIENDLINESS AND DOMINANCE IN A THERAPEUTIC GROUP.

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THE complex interpersonal relationships which establish themselves when people meet and interact reveal a number of bipolar aspects or trends, such as liking—dislike, competition—co-operation, dominance—subordination, identification—counter-identification, and others. Of these the relationships of friendliness and dominance have been selected for study, not because they are considered of greater intrinsic importance for the dynamics or therapeutic efficacy of groups than other interpersonal trends, but because they are accessible to a fair degree of measurement and numerical handling. They can thus render impressions which have been gained through group observation more definite and reliable; they may even correct them or point to aspects which had escaped notice.

The data forming the basis of this study were obtained from a group of nine male out-patients, suffering from social-neurotic symptoms. They were treated by "group-analytical psychotherapy" (Foulkes, 1948), i.e. a method of treatment which leaves the initiative, as far as possible, to the patients, and restricts the role of the therapist to one of guidance and supervision. This essentially permissive and observant attitude of the therapist allows the free and almost undisturbed development of interpersonal relationships.

The patients met twice weekly and the group sessions lasted 1½ hours. The group membership remained unaltered. After 5 months of treatment the patients were given a questionnaire, asking them to record their feelings towards each of the other members, and to judge certain traits and qualities in them.

LIKINGS—DISLIKES.

The pattern of friendliness and aversion in groups of people has been extensively investigated by Moreno (1934) and his school who have termed this field of study "sociometrics."

Moreno bases his investigations on a "sociometric test" which consists "in an individual choosing his associates for any group of which he is, or might become, a member."

It was not possible to apply this test as such to the present group. The patients had been selected for treatment because of their neurotic difficulties in company. They had few or no friends, and had anxiously concealed their neurotic symptoms from their social environment. They did not want it broadcast that they had to come for treatment. Therefore, they would hardly

have chosen any group member as an associate or friend ; in fact, most of them studiously avoided any contact with each other outside the hospital. They dispersed almost immediately after the sessions and each one chose a separate route home, though joint travelling for at least part of the way would have been possible for several of them. Most of them did not even want to know where other members lived. Indeed, it could be shown that a question concerning the choice of friends among group members would have revealed an inadequate picture of the relations of friendliness in the group. The use of a questionnaire to elicit interpersonal relationships had also other advantages : it facilitated the mathematical analysis of the data and assisted in the assessment of the pattern of dominance.

The questionnaire contained three questions about feelings of friendliness and dislike : (1) Do you like him ? (2) Do you dislike him ? (3) Would you like to have him as a friend ? The answers to these questions could be Yes, No, and Doubtful. Yes was recorded as + 1, No as − 1, and Doubtful as zero. The signs of the scores of Question 2 were reversed so that all questions related to friendliness. The sum of the scores of these three questions are given in Table I, in which the scores of liking which each individual made are entered in horizontal rows. Thus the scores of + 3 in the first row mean that patient A. liked the patients D., F., and I.

TABLE I.—*Friendly Feelings.*

	A.	B.	C.	D.	E.	F.	G.	H.	I.	Friendliness.
A. liking .		+1	−1	+3	−1	+3	+1	0	+3	+9
B. ,, .	+3		+1	+1	+3	−1	−1	−1	+3	+8
C. ,, .	+2	0		−1	−1	+1	+3	+3	+1	+8
D. ,, .	+2	0	0		−3	+1	+1	+2	+2	+5
E. ,, .	+1	+2	+1	−1		+1	−2	+1	+2	+5
F. ,, .	−1	−3	+2	−2	+1		+1	+1	+3	+2
G. ,, .	+3	+3	−3	−1	−3	+1		+1	+1	+2
H. ,, .	0	−3	−1	+1	−3	0	+1		−2	−7
I. ,, .	+2	−3	−3	0	−3	−2	0	−3		−12
Popularity .	+12	−3	−4	0	−10	+4	+4	+4	+13	+20

Table I is an asymmetrical matrix with blank diagonal cells. It provides us with four different sets of scores which refer to four separate aspects of the pattern of friendliness in the group. The scores in the cells of the matrix itself represent interpersonal likings ; the marginal column on the right contains scores which denote the different degrees of friendliness which group members felt towards the rest of the group ; the marginal row at the bottom contains scores which indicate the group status of popularity for each of the group members ; the score of + 20 in the bottom right-hand corner is the sum-total of the friendly feelings in the group.

These four aspects of the pattern of friendliness and their significance will be examined in turn.

The general level of friendliness is shown by the sum-total of + 20 of all the scores. Had the interpersonal scores of liking in the cells of the matrix been given purely by chance, this sum-total would have been zero. The greatest possible sum-total for this particular matrix, which was derived from

the additive scores of three questions, would be + 216. The actual figure of + 20 is, therefore, very low and indicates a poor atmosphere of friendliness. This agrees with the impression obtained from the observation of the group during sessions. There were only 2 members (B. and E.) who met each other on a social level outside the hospital.

This low level of friendly feelings in the group does not by itself indicate a low degree of group cohesion. If we judge group cohesion by the frequency and regularity of attendance, then the degree of group cohesion was by no means low in this group. It was a "closed" group, and seven of the original nine members still attended faithfully after 10 months of treatment. It seems that the concept of group cohesion should not be too closely linked with the level of group friendliness.

It can be shown that the low level of group friendliness was, for the most part, due to the aversion against choosing a friend among group members. This is revealed by the separate sum-totals of each of the three questions measuring friendly feelings. The sum-total of the scores of Question 1 ("Do you like him?") was + 17; of Question 2 ("Do you dislike him?") + 38 (after reversal of signs); but Question 3 ("Would you like to have him as a friend?") elicited so many negative replies that the sum-total was − 35. (In spite of the fact that the sum-total of Question 3 differed so markedly from the other two questions, the correlation of the matrix scores of Question 3 with the additive scores of Question 1 and 2 was + ·38, which is apparently significant beyond the 1 per cent. level.)

The figures in the right-hand marginal column of Table I are the sums of the scores of liking recorded by each member. They therefore indicate the total friendliness each member felt for the rest of the group. It will be seen that wide differences existed among the patients. These differences were due to individual and very personal causes which either encouraged or hampered a friendly attitude towards the group as a whole. Patient A., for instance, was an obsessional whose high score of friendliness was the result of reaction formations against his repressed aggressive and critical inclinations. Patient C. was an aloof and unemotional person who had never before experienced the companionable feelings which develop in regularly attended groups. He therefore tended to rate his attitude to the group as friendly, though this was not borne out by his actual behaviour, which was cold and reserved. Patients H. and I. had very low scores of friendliness; in fact, one should have thought, from their negative scores, that they felt hostile to the group. Yet there was no hostility in their behaviour during group sessions; it transpired in later group discussions that their negative scores had not been due to a real dislike of the group members, but to a fear of admitting too fond an attitude.

It is interesting that the feelings of friendliness towards the group ran parallel with expectations of being liked. The questionnaire contained two questions concerning such expectations. They were: "Do you think he likes you?" and "Do you think he dislikes you?" These two questions taken together yielded scores for the expectation of being liked by the group which correlated + ·84 (which is significant beyond the 1 per cent. level) with the feelings of friendliness towards the group. In other words, the conscious

feelings of friendliness towards the group, which each member experienced, were projected on to the other group members.

The differences in individual friendliness towards the group do not tell us much about group phenomena: they merely illustrate discrepant individual standards in the self-assessment of friendly feelings. These differences also obscure the significance of the scores of interpersonal attractions with which we are primarily concerned here. To be able to judge the pattern of friendliness adequately, it is necessary that the scores of friendliness between individuals, i.e. the scores in the cells of the matrix, should be comparable. This is, however, only possible if the total friendliness towards the group is the same for each individual. It is obvious, for instance, that the interpersonal score of + 2, recorded by patient I., whose friendliness towards the group was as low as — 12, had a different significance from that of the same score towards the same patient by patient C., whose friendliness towards the group was + 8.

From all these considerations one must conclude that the raw scores of friendliness as given in Table I require a correction by equalizing the figures of friendliness towards the group as a whole, given in the right-hand marginal column. This would make the interpersonal scores comparable and give a truer picture of the differential likings each patient had for the other members.

Such an equalization can be achieved in various ways; the simplest method is to transform the raw scores of each individual member into rank scores. The person who is most liked by a particular patient will then have the lowest score, i.e. rank 1, and the one liked least the highest, i.e. rank 8. Persons who received equal raw scores will be given "tied" ranks, using the "mid-rank method," which allocates to tied members the average of the ranks they would have possessed if ranked consecutively; e.g. if, in any row, there are two members who have received the highest raw score of + 3, they would each be allotted rank 1·5. The sum of all the rank scores in each row will then be equal to 36 and need not be specially recorded.

TABLE II.—*Friendly Feelings (in rank order).*

	A.	B.	C.	D.	E.	F.	G.	H.	I.
A. liking (in rank order) .		4·5	7·5	2	7·5	2	4·5	6	2
B. ,, ,, .	2		4·5	4·5	2	7	7	7	2
C. ,, ,, .	3	6		7·5	7·5	4·5	1·5	1·5	4·5
D. ,, ,, .	2	6·5	6·5		8	4·5	4·5	2	2
E. ,, ,, .	4·5	1·5	4·5	7		4·5	8	4·5	1·5
F. ,, ,, .	6	8	2	7	4		4	4	1
G. ,, ,, .	1·5	1·5	7·5	6	7·5	4		4	4
H. ,, ,, .	3·5	7·5	5	1·5	7·5	3·5	1·5		6
I. ,, ,, .	1	6·5	6·5	2·5	6·5	4	2·5	6·5	
Popularity . . .	23·5	42	44	38	50·5	34	33·5	35·5	23
Popularity (in rank order) .	II	VII	VIII	VI	IX	IV	III	V	I

Table II shows this transformation of the raw scores of liking into rank scores. It can now be seen that the raw score of + 2, given by patient I., meant that he liked patient A. most, whereas patient C., who had given the same score to A., had really ranked him only third.

Sociometrists do not take the variability of personal friendliness and its distorting influence into account. In representing the pattern of attractions

in a group they use raw scores and prefer to depict the pattern by means of a sociogram. There is no doubt that a sociogram reveals the criss-cross of the currents of friendship in an easily recognizable form, provided the group is not too large; it does not, however, permit further mathematical analysis of the data. Forsyth and Katz (1946) and Katz (1947) made an attempt to replace sociograms by the use of specially manipulated matrices ("sociomatrix"), but their procedure was criticized by Moreno (1946).

Lazarsfeld (1945) and Bronfenbrenner (1945) have given mathematical formulae which assess the significance of certain sociometric data by their deviation from chance expectancy. These formulae are open to criticism if they are applied to data obtained by means of the sociometric test, but are valid if a questionnaire has been used in the collection of data (Edwards, 1948). It is then, however, necessary to reconsider the probabilities on which the formulae are based.

If we regard as evidence of liking, rank scores between (and including) 1 and 2 in Table II, as evidence of indifference rank scores of more than 2 and less than 7, and as evidence of dislike rank scores between (and including) 7 and 8, we can assess approximately the probabilities of the three emotional attitudes: liking, indifference, and dislike. The probability that person A., if he had filled in the questionnaire quite haphazardly, would have ranked person B. as a liked person is approximately 2 in 8. In other words, the probability of liking (p_1) equals approximately $2/8 = \frac{1}{4}$. The probability of indifference (p_2) equals approximately $4/8 = \frac{1}{2}$, and that of dislike (p_3) equals approximately $2/8 = \frac{1}{4}$. (Note that $p_1 + p_2 + p_3 = 1$).

Of particular interest in the assessment of group structure are those data which indicate the pattern of mutual and non-mutual relationships.

The probabilities of paired choices are given by the expansion of the trinomial $(p_1 + p_2 + p_3)^2$. This expansion contains 6 terms.

Three terms refer to the probabilities of mutual relationships:

The probability of mutual likings $= p_1^2$.
,, ,, ,, indifference $= p_2^2$.
,, ,, ,, dislikes $= p_3^2$.

Three terms refer to the probabilities of non-mutual relationships:

The probability of liking—indifference $= 2p_1p_2$.
,, ,, ,, liking—dislike $= 2p_1p_3$.
,, ,, ,, indifference—dislike $= 2p_2p_3$.

In a group of n members there is a total of $n(n-1)/2$ possible pairs, i.e. 36 pairs in the present group of nine members. The chance expectancy of paired choices is thus obtained by multiplying each of the above probabilities by 36. (See Table III.)

The derivation of the chance expectancy of non-mutual choices differs from that employed by Lazarsfeld (1945). Lazarsfeld reasoned that an "unreciprocated choice of A. by B. is to be counted separately from an unreciprocated choice of B. by A." In consequence his formulae make use of twice the number of possible pairs for n persons, and only half the correct values of the probabilities for non-mutual choices.

The values for the chance expectancies have to be compared with the actual frequencies of mutual and non-mutual choices which occurred in the group. Examining the data of Table II we find, for instance, that there were four mutual choices each of liking and of dislike. The four pairs of mutual liking were between the patients A. and D., A. and I., B. and E., and D. and H. Mutual dislike existed between B. and F., B. and H., D. and E., and E. and G.

In larger groups the task of finding, from the matrix scores, the actual frequencies of mutual choices can be made easier by using a method of matrix algebra suggested by Festinger (1949) and elaborated by two of his students, Luce and Perry (1949).

In Table III the values of the chance expectancies and of the actually observed frequencies of the various mutual and non-mutual choices are presented. Both values have to add up to 36, the total number of possible pairs in a group of nine members.

TABLE III.

	Chance expectancy.		Actual frequency.	
Mutual liking	2¼		4	
Mutual indifference	9	13½	10	18
Mutual dislike	2¼		4	
Liking—Indifference	9		10	
Liking—Dislike	4½	22½	2	18
Indifference—Dislike	9		6	
Sum	36		36	

In evaluating Table III we must pay special attention to the pairs of mutual liking, as they represent an index of the established and reciprocated friendships in a group. Bronfenbrenner (1945) called it an "index of coherence." Our task is to assess the significance of the difference between expected and observed values of mutual likings.

The probability how often an observed value of mutual liking could have arisen by chance, is given by the expansion of the binomial $(q_m + p_m)^N$. In this formula p_m is the probability of a mutual choice of liking arising by chance (i.e. in the present case $p_m = p_1^2 = 1/16$); $q_m = 1 - p_m$. N is the total number of possible pairs in a group (i.e. 36 in the present case).

If the observed number of mutual pairs of liking is x, the appropriate term of the binomial expansion is

$$\frac{N!}{x!(N-x)!} q_m^{N-x} p_m^x.$$

The sum of this and of all the subsequent terms of the binomial expansion gives the probability with which x or more pairs of mutual liking could have arisen by chance.

In general, this computation is cumbersome and time-consuming. Bronfenbrenner suggested alternative methods which are more easily calculated,

such as approximation by the Poisson Distribution (if p is sufficiently small), by the Incomplete Beta Function, and by Pearson's Type III Function.

In the present example the probability that 4 pairs of mutual liking arose by chance is ·19. This indicates that the difference between expected and observed values is not at all significant.

Table III can also be evaluated in a more general way which takes account of all the paired choices. The three observed values for mutual liking, mutual indifference, and mutual dislike are higher than the values expected by chance alone. To test whether this difference for the 18 pairs of mutual choices is significant statistically, the chi-square technique can be employed. Chi-square is found to be 2·4. The probability of this value (for one degree of freedom) is again not significant.

In this group there was, therefore, neither a significant trend to form pairs of mutual friendships, nor a significant trend to form a distinct pattern of liking and dislike. This result may be partially due to the small number of group members, but it may also indicate that the patients maintained a social and emotional distance from each other which prevented the emergence of a distinct pattern. Such a conclusion would be in keeping with the fact that the group members were socially handicapped by their neuroses and could not readily form interpersonal relationships. A final evaluation is, however, not possible until the results in this group have been compared with those in other groups. It may be of interest in this respect that Bronfenbrenner (1945) compared the frequency of mutual likings in school groups of varying age levels. He found that, with nursery and kindergarten children, the number of mutual likings did not differ significantly from chance expectancy, but that very significant deviations from chance expectancy occurred in older children.

We can now finally turn to the figures in the marginal row of Table II. They are the sums of the ranks of friendliness which each patient received from the rest of the group. They therefore indicate his status in popularity. In the lowest row of Table II the rankings in popularity are given. Patients A. and I. are the most popular members of almost equal status, patient E. is the least popular one.

The rankings of popularity are important data for the study of group dynamics. In assessing the significance of these rankings one has to keep in mind that popularity depends on two complementary factors: (1) the particular group composition and group task, and (2) the personality traits of the patient.

In judging the role which the particular group composition and group task plays in determining the popularity status of a patient, one has to compare his popularity in the therapeutic group with his popularity in other social environments. If his status in the therapeutic group is atypical—if he is either more or less popular then usual—then the explanation must lie in the particular composition and task of the therapeutic group.

If the patient enjoys an unusually high degree of popularity in the therapeutic group, he will naturally derive much narcissistic gratification from his treatment, and may tend to become a "chronic" group patient, who might be profuse in his praise of the treatment and yet show little or no abatement

of his neurotic condition. In the opposite case, when a patient is unusually disliked in a therapeutic group, he will probably, sooner or later, leave the group to which he is apparently unsuited.

In other patients the degree of popularity is predominantly determined by personality traits, and especially by those of a neurotic character. A person's status of popularity can be, and often is, a neurotic symptom. In that case, his status will be approximately the same in most of the social groups of which he is a member.

Let us now examine, from these viewpoints, the scale of popularity shown in Table II. This will afford an opportunity to delineate in greater detail the personalities, psychopathology and group responses of some of the patients. It is the particular advantage of group-analytical psychotherapy that it allows not only the examination of group data, but also of the characteristics of individual personalities. To concentrate exclusively on the pattern of interpersonal responses and the scales of group status, produces a mere shadow portrait of group actuality. The description of personalities will add some of the light and life of individuality which is lacking in a purely mathematical analysis.

Patients I. and A. were by far the most popular members, and in either case their degree of popularity had a neurotic aetiology. Patient I., as will be shown later, was the accepted group leader, and his popularity was associated with this fact. As it was his group dominance which was primarily determined by his neurosis, he will be discussed under the heading " Dominance—Subordination."

Patient A. was an anal-erotic personality; he was meticulous, stubborn, niggardly with money, afraid of dirt, and subject to attacks of indigestion and bouts of vomiting. In the company of his peers he was kindly, obliging and unassuming, hence his popularity in the group and in his office. Hence, also, his high score of friendliness towards the group as a whole, which has been mentioned earlier. Yet his kindliness was a neurotic reaction formation. Generally he disliked and avoided company, as he felt uncomfortable and self-conscious when he was with people who always seemed potentially critical of him.

There were, however, significant loopholes in his unaggressive and accommodating façade. He could be violently offensive when he felt he had the backing of the group or of general opinion. He hated and feared the occasional visitors to the group and was an instigator of subsequent group discussions which expressed group hostility against them. He learned to understand that his antipathy against the foreigner and the Jew had a similar group-supported basis, since without such sanction he would never have dared to feel or express it.

In dealing with people in authority his usual friendly demeanour gave way to an anxiously detached politeness which, however, avoided any sign of deference. He always had to reassure himself that he was not inferior to anybody. He could never call his office superiors " Sir," and he found it nearly impossible to express gratitude to them even if the situation demanded it.

During group sessions he could abreact his hatred of authority without fear of punishment and often with the backing of the group. But such incidents

led to discussions which showed up his reaction formations and his anal-erotic characteristics. After months of treatment the group went even further: they linked his mistrust of authority with other psychopathological trends in him, particularly with passive-feminine tendencies and a fear of assuming the masculine role. There was plenty of evidence for this. His nickname as a child had been Cinders, because he loved to do the household chores for his mother; in adolescence he had performed homosexual practices on a grown-up person who rewarded him with presents; in sexual intercourse he had to assume a passive and supine position to obtain gratification; his most disabling symptom, writer's cramp, had started when he signed a Deed completing the purchase of a house which, he felt, saddled him with financial obligations and the responsibilities of a family man.

The two most unpopular members were E. and C. E.'s unpopularity was not due to neurotic traits but to the particular conditions of this group. He was more liked and socially accepted in company which was more congenial to him. His low status of popularity in this group was to a large extent due to his unsuccessful bid for dominance, and will be considered later.

Patient C. was neurotically unpopular in all social situations because of a very marked inhibition of interpersonal emotions. He was cold, aloof, intellectual, and never experienced feelings of genuine friendship or love. His egocentric world was hardly disturbed by the slights and rejections he often encountered. His emotional life was encapsulated in day-dreams and fantasies remote from reality. Whatever personal contacts he had achieved, had been dictated by a spirit of experimentation and curiosity to test his ability of translating some of his fantasies into practice. He had always been lonely, awkward and gawky in company, yet he had become an expert dancer because he desired to meet women and to impress them. Dancing, however, had remained his only sociable asset. It enabled him occasionally to find out how far he could let himself go in making sexual advances. He had no desire for love and friendship, and he did not want sexual intercourse. He was only driven by an anxious feeling of curiosity and bravado. No wonder that his female partners invariably broke off the association after one or two meetings.

His behaviour in the group followed the ingrained pattern. He tried to conceal his emotions and only betrayed them through blushing. When he spoke he was slow, deliberate and intellectual. Often he seemed lost in day-dreams. Another member told him once: "You shut yourself off in your own little world. You always seem miles away from us." There was no warmth of feeling in his relations with any of the other men.

When, at a later stage, three female patients were joined to the group he became more active. He arranged to meet one of them privately. They went out together twice, then the girl refused bluntly to meet him again. Unabashed, he transferred his attentions to another of the female patients. The result was the same. When he showed signs of becoming interested in the third female patient, he caused her such anxiety that she became rudely aggressive and called him a repulsive "gangling idiot," with whom she would not like to be seen outside the hospital.

Naturally, these episodes and rejections formed the topic of discussion

during several sessions. His first partner told him: "You seemed completely detached. You were looking for something from me and you were not prepared to give anything of yourself to the relationship. I could not get through to you, and could not get anything from you. It was embarrassing when you took my arm in a more than friendly manner because there was no emotional link between us. You gave me the impression that I, as a person, did not count." Another member: "It seems you were quite egocentric. Were you merely experimenting? Is it that you want to know how daring you can be?" On a later occasion he was told that he had been "incessantly prying," that he was like a "Peeping Tom" whose interest was "sheer unadulterated sex." He was left in no doubt about the feelings he had evoked and why. During all these sessions patient C. became the dominant influence in the group and also the most disliked member. The intensity and unanimity of the antagonism he had aroused pierced his armour of unemotional detachment; he was embarrassed, disturbed and even at times aggressive, but, on the whole, he accepted the volley of abuse and criticism with surprising equanimity.

So far we have dealt with four aspects of group friendliness: (1) the general atmosphere of friendliness, (2) the scale of individual friendliness, (3) the pattern of interpersonal attractions and aversions, and (4) the scale of popularity. By transforming the raw scores of friendly feelings into rank scores the influence of the scale of individual friendliness and of the general atmosphere of friendliness was eliminated. It now remains to consider the relation between the pattern of interpersonal attractions and the scale of popularity.

It would be misleading to assume that a simple additive relation exists between these two group aspects merely because the scale of popularity was derived from summing the interpersonal scores of liking which members received from the rest of the group. In fact, the same scale of popularity would have been obtained from a multitude of different patterns of interpersonal attractions.

Furthermore, the two group aspects are different in quality. The scores of interpersonal likings are based on the *subjective* self-assessment of friendly feelings; the scale of popularity, on the other hand, must be considered as an *objective* group characteristic. The terms "subjective" and "objective" are here used in the sense indicated by Karl Jaspers (1948), that subjective facts are "immediately experienced by the patient and only indirectly accessible to the observer," and objective facts are "perceivable in the world and directly demonstrable." The objectivity of the scale of popularity could be definitely established if a number of independent and emotionally detached observers of group events would arrive at scales of popularity which differed little from each other.

In the present example no group observers were present, and the objectivity of the scale of popularity is therefore only an assumption which, I submit, can be justifiably made.

It may then be asked: How far were the group members aware of the scale of popularity, and in what way, if at all, were they influenced by it?

First of all: Were the group members aware of their own status of popularity? The answer to this question can be given, and it is "No." The rank

correlation coefficient between the expectation of being liked and the scale of popularity, as revealed in Table II, is —·23 which is far from significant.

Were the group members aware of the scale of popularity excluding their own status? This question cannot be answered with confidence, as the desirability of such an enquiry had been overlooked when the questionnaire was drawn up.

It is, however, likely that the members had some impression of the scale of popularity as far as it concerned the rest of the group. If so, did this knowledge influence some or all of the friendship scores they recorded? The answer to this question is again uncertain; yet it would be of practical importance to know what kinds of questions are most likely to reveal subjective feelings undistorted by the influence of objective popularity. It would, for instance, be of interest to ascertain whether more reliable scores are obtained by the questionnaire method used here or by requesting the patients to rank their friendly feelings towards the other members—a method which would be closer to the sociometric test.

In the present investigation this direct ranking method has also been used in order to check the reliability of the scores of friendliness obtained by means of the questionnaire. After the patients had completed the questionnaire they were required to group the other members in order of liking and to indicate those patients about whose ranking they felt uncertain. These uncertain scores were regarded as tied rankings. It was found that the scale of popularity derived in this way had a rank correlation of + ·95 with the scale of popularity shown in Table II.

There were minor differences among the interpersonal scores in the cells of this new matrix, and some of these differences seemed to indicate an awareness of the objective scale as cause. This was particularly the case with the scores which the most popular member, I., received. When the other patients directly ranked their feelings of friendliness towards him, four of them accorded him a higher status of popularity and only one a slightly diminished status, as compared with the figures obtained in Table II.

There was possibly another effect of the same kind. The mutual friendship between patients B. and E. was beyond doubt, as they were the only two members who met on a social footing outside the regular group meetings. Table II recorded this mutual friendship, but the new matrix did not. Both these patients had a low status of popularity and it is feasible that this fact was responsible for the reduction of their interpersonal rank scores, so that they appeared to be mutually indifferent in the new matrix.

It would be rash to place too much weight on these findings. The fact that the questionnaire method yielded apparently more adequate results in the present case may have been a chance product. It is advisable, however, to keep the possibility in mind in future investigations, that the subjective scores of friendliness may be distorted by the influence of the objective scale of popularity.

Dominance—Subordination.

It is a general characteristic of established groups that a hierarchy of dominance emerges among their members. Such hierarchies have been

observed in many types of animal groups (e.g. Maslow, 1936, and Masserman, 1943). The present author has previously reported on some aspects of dominant personalities in therapeutic groups (F. Kräupl, 1947). It appeared that the status of dominance was not decided by personal aspirations, but by objective personality traits and their adequacy for the group task.

To obtain a measurement of the hierarchy of dominance in the group a different approach had to be chosen from the one that had proved useful in arriving at the scale of popularity. It was not attempted to ask the members whether they *felt* dominant to another patient as it was thought that the patients would have produced scores so biased and distorted by egocentric influences as to be of poor validity.

The following method was therefore adopted. As the scale of dominance is an objective scale, like the scale of popularity, it could be assumed that the group members would have a general impression of its distribution, and that their impression would come as near to an objective measurement as had been the case with regard to popularity. The members were therefore asked to give the names of those patients who had dominated and influenced the group discussions most and least, irrespective of whether such influence had been regarded by them as helpful or not. The replies to this question yielded a provisional scale of dominance. To improve its validity it was necessary to find questions tapping dominant attributes in a more indirect way. To avoid selecting such questions on *a priori* grounds, correlations between the provisional scale of dominance and corresponding scales derived from other questions in the questionnaire were calculated. As the sample size was only nine, the correlation coefficients (for 7 degrees of freedom) had to be $\pm$·67 or more, to be significant at the 5 per cent. level at least. In this way it was found that the provisional scale of dominance seemed to be significantly correlated with questions referring to forcefulness, courage, self-confidence, verbal facility, ready admission of embarrassing personal data, lack of feminine trends, and postulated leader capacity in an emergency. Assuming that these questions assessed various aspects of dominance, the individual scores of all these questions were added together (as had been done with the scores referring to friendly feelings). The final scores of the judgments of each individual patient were then transformed into rank scores, and a matrix of dominance judgments was thus obtained (Table IV.).

TABLE IV.—*Hierarchy of Dominance.*

	A.	B.	C.	D.	E.	F.	G.	H.	I.
A. judging (in rank order) .		4	5·5	5·5	2·5	7	2·5	8	1
B. ,, ,, .	4		5·5	7	2	5·5	3	8	1
C. ,, ,, .	6	7·5		7·5	3	5	2	4	1
D. ,, ,, .	3·5	8	3·5		6	5	2	7	1
E. ,, ,, .	2	8	4	5·5		7	3	5·5	1
F. ,, ,, .	5·5	7·5	3·5	5·5	2		3·5	7·5	1
G. ,, ,, .	3	7·5	2	5	1	7·5		4	6
H. ,, ,, .	6	8	4	5	2·5	7	1		2·5
I. ,, ,, .	3	4	5	6	1	7	2	8	
Dominance status . .	33	54·5	33	47	20	51	19	52	14·5
Dominance status (in rank order)	IVss	IX	IVss	VI	III	VII	II	VIII	I

The scores of dominance judgments in Table IV have an essentially different meaning from the scores of feelings of friendliness in Table II. The scores of friendliness registered subjective feelings towards others, and these feelings could be mutual or not. The scores of dominance, on the other hand, are based on judgments of objective personality traits in others, and are only indirectly affected by subjective feelings. The question of mutuality does not arise with them. The data of special interest are: (1) the distribution of the scores which each member received from the rest of the group (i.e. the distribution of the scores in each column), and (2) the distribution of the total scores for each member (i.e. the sums of the columns) which corresponds to a scale of dominance.

If the questions which were selected from the questionnaire consistently measure aspects of dominance, and if the judgments of the individual members were, as far as possible, objective and undistorted by personal bias, the scores in each column should be fairly consistent and show little variation. Examining the columns of Table IV from this point of view, we find that the patients D., F. and G. have been judged consistently, and that almost all the other patients received fairly consistent scores, if one or two exceptions are ignored in each case. In fact, almost all these exceptions could be explained by personal bias on the part of the judging member. We may therefore accept Table IV as an approximate and fairly objective record of the distribution of dominant traits among the group members.

The scale of dominance is expressed in rank order in the bottom row of Table IV. It will be noticed that I. was the most dominant member. As he had also been first on the scale of popularity, patient I. is revealed as the accepted leader of the group.

E. and G. came next in dominance. It is an interesting and obviously significant fact that these two patients were the only members of the group who interrupted their treatment prematurely; the other seven members continued to attend regularly until their treatment was terminated after nearly two years. I must, however, confess that it was only in retrospect when studying the scores of dominance, that I was duly impressed by the implications of this fact.

Patient E., in spite of his high status of dominance, was the least popular group member. (It is, therefore, not justified to speak of the most popular member in a group as the "leader," as sociometrists generally do. Dominance and popularity need not go together. In fact, there was no significant correlation in the present instance between the scale of dominance and popularity). It has already been mentioned that the unpopularity of patient E. was due to the particular circumstances of this group. These circumstances were the rejection by the group of his bid for dominance. He had a slight stammer, but was a verbose speaker who could not express himself clearly and concisely. This often exasperated the group. They were also annoyed by E.'s frequent and ostentatious announcements that his neurotic symptoms were rapidly disappearing. I shared the group's doubt of the genuineness of this professed improvement. However, E. decided, after about eight months of treatment, that he was as well as he could hope to be. He applied for a job in a distant

town and was accepted. This made any further group attendance impossible. A year later he informed his group friend, patient B., that his improvement had continued and that he was confident that his neurotic difficulties would not return.

While patient E. thus interrupted his group treatment prematurely because he felt he was more or less cured, patient G. gave his reasons for leaving the group that he had derived no benefit from it, and that he could not hope to achieve any improvement as all the group members were hostile to him. This second reason was by no means correct, as G. occupied the third rank in popularity, as shown in Table II. During group sessions it was noticeable that G. endeavoured to oust I. from his leading position. He was aggressively contemptuous of I., and started heated arguments with him at almost every meeting. This antagonism is also reflected in the scores of Table IV. Whereas almost all the members had ranked patient I. as highest in dominance, G. had relegated him to the sixth place. This explains the one inconsistent score in I.'s column in Table IV. There were other reasons for G.'s decision to discontinue treatment, but his frustrated aspiration for dominance certainly played an important, though at the time insufficiently realized, role in it.

Patients B. and H. occupied the lowest positions on the scale of dominance. These two patients, though they disliked and avoided each other, had one symptom in common which separated them from the rest of the group: they had marked homosexual tendencies. The low dominance rating they received was, in part, determined by the antagonism, fear and contempt the spectre of homosexuality had aroused in the other patients. This applies particularly to patient B. In fact, it seems that B.'s subordinate status in this group was due mainly to this group bias, and not to marked submissive traits in his personality. B. achieved a more dominant status in other social situations, and particularly when he felt he was not suspected of homosexuality. His occupation was that of a salesman, and he was fairly successful in it, which would have been impossible if he had really been a very passive and submissive person. When B. became a member of a sexually mixed group, together with H. and D., he actually achieved a fairly high position of dominance, of which more will be said presently.

Patient H., who shared homosexual inclinations with B., was truly and neurotically subordinate. He felt so anxious when he was in the company of more than one other person that he could not assert himself in any way. Later, in the mixed group, he became almost completely silent and could only be induced to speak a few whispered words with obvious distress. He soon became almost totally neglected, but he continued to attend the group sessions until they came to an end.

Social fears, which thus effectively and disastrously inhibited patient H., had an entirely opposite effect on the group leader, I. This patient was impelled by his social neurosis to strive for dominance and mastery. Superficially he gave the impression of being a sociable person who enjoyed company and conversation. Yet this apparent sociability concealed neurotic handicaps of such severity that they would have been crippling to another person with a less resourceful and successful defence against them. His leading symptom

was a fear of blushing, and his whole life had become a constant manoeuvre to avoid any situation in which his blushing might be observed. He could not work in an office or eat in a restaurant. On buses he felt uncomfortable unless he could hide himself behind a newspaper. He could not even pass a cinema queue without acute embarrassment. Yet his occupation—he held a good position as an engineer—was so carefully selected and his work so ingeniously arranged that he succeeded in avoiding all compromising situations. Nobody ever suspected that he was suffering from neurotic social fears, not even his wife. But eventually he had to confess to her that his refusal to go with her to dances or on visits to friends was not due to ill-will or neglect, but to anxieties he could not overcome. It was only after this confession to his wife, and on her initiative, that he came for treatment.

In the group, as in all other company, he made sure that he had a place with his back to the light so that the colour of his face could not be easily observed. He could not leave the conversation to others, but had to monopolise it. Otherwise he felt trapped and could not banish the fear of blushing from his mind. At the beginning of group treatment he kept up an almost continuous flow of conversation, and, although this anxious compulsion to speak at all costs soon abated, he remained, during the whole course of treatment, one of the most vocal members. It was characteristic of him to make impetuous peremptory statements whenever the trend of the discussion embarrassed him. The first time he replied to an awkward question: "I must think first," he was congratulated by the group on showing so much improvement. He remained the most dominant member, except for brief periods, but his manner became more restrained and considerate. Towards the end of group treatment, when he was reminded of his previous behaviour, he exclaimed: "I can see now what a bumptious bore I must have been."

The scores indicating the scale of dominance in Table IV show that patient I.'s leader position was very secure, especially after his two rivals (E. and G.) had left the group. I.'s score was 14·5 and the score of A. and C., who tied for the next rank, was only 33. The scores of the remaining members ranged from 47 to 54·5. This distribution of scores reveals that the group consisted of one active leading person (patient I.), two members (patients A. and C.) who were co-operative, but reluctant to take the initiative, and four members (B., D., F., and H.) who were in very subordinate positions. The result was that, whenever the group leader I. was absent, the conversation tended to flag.

This situation remained unchanged as long as the group membership was the same. After 10 months of treatment, two sexually mixed groups were formed by amalgamating the members of this male group with those of a female one. Some of the results of this amalgamation have been reported elsewhere by the author (1949). The change in group composition was accompanied by certain changes in the hierarchy of dominance. Patient I. retained his position, by and large, but patient C. gained in dominance and, for a time, even surpassed I.'s influence. This happened during C.'s unsuccessful attempts to form friendships with female members.

The second mixed group contained three men and four women. All the men (B., D., and H.) had been of subordinate status in the all-male group.

In the new group the two dominant positions were held by female members. Patient B., who had been the most subordinate member in the all-male group, mainly because of his homosexuality, felt less inhibited in feminine company, and gained in influence and group co-operation to such an extent that he now occupied the third position of dominance. He also surpassed the other two men in popularity. His rival, H. (there had been mutual hostility between H. and B.), accepted his defeat and sank to a very insignificant position. D., on the other hand, responded with an effort of aggressive self-assertion, which was quite unusual for him, in order to re-establish his dominance over B.

D. was the most gifted and intelligent of all the group members. His scores on the General Aptitude Test Battery (U.S. Employment Service) were consistently high. His (corrected) score for general intelligence was 138, and his (corrected) verbal score was 154. Yet these assets were of little avail to him in the group or in life generally. His neurotic handicaps were very disabling. When he joined the group his occupation was that of an unskilled labourer. He had persuaded himself that he had no social ambitions and did not want to live by " bourgeois " standards. He soon realized, however, the " sour-grapes " basis for these rationalizations, and was then able to improve his vocational position to a certain degree.

He was very inhibited during group sessions. Any form of potential domination and criticism generally silenced him. If he wanted to speak in the group, he had to make determined efforts to overcome his trepidation. After sessions of the all-male group, however, he would collect around himself those few patients who were of lower dominance status, and hold forth to them, displaying his superior knowledge gained by wide and voracious reading.

D.'s aggressive attempt to regain his dominance over B. occurred after the mixed group had been established for nine months. A direct and undisguised battle for dominance in a long-established group of constant membership is not often observed, and it is proposed to give an account of it by quoting verbatim extracts from group records. Only the three main protagonists will be mentioned, and they will be referred to as Eve (the dominant female member), Bill (patient B.), and Don (patient D.).

The events were foreshadowed in a session in which Don complained that his symptoms prevented him from achieving any of his ambitions. " There is a world of difference," he said, " between my ambitions in fantasy and in reality. . . . . A little learning is an ambition of mine, but it is so undermined by symptoms. It is really quite hopeless. My learning capacity operates only at 5 per cent. efficiency."

At the next session Don opened his attack on Bill quite unexpectedly and without provocation. Bill had remarked that he had been quite successful as a salesman and had acquired a fairly good working knowledge of wireless and television.

Don (to Bill) : " Do you think you know more about salesmanship and wireless than I do ? "

Bill (apologetically) : " I would not say so."

Eve came to Bill's support. She turned aggressively to Don : " Why do you think you know more than Bill ? Are you perhaps an engineer ? "

Don : " I am not an engineer, but I am fully qualified in all branches of wireless and radar. I learned it in the Navy."

Eve : " You still can't say you are better than Bill unless you go and compare your knowledge with his. Anyway, Bill is not an engineer. He is a salesman and he has been quite successful."

Don: "Do you think he knows more about salesmanship than I do?"
Eve: "*Do* you know anything about it?"
Don: "I do."
Eve: "Then why do you stick to your inferior office job?"
Don (disregarding the question): "I used to do some selling myself for a short time."
Bill: "I have had quite a long experience. I stood behind a shop counter in the West End for five years."
Don: "From what I have seen of people behind shop counters I have come to the conclusion that they have no knowledge of salemanship at all. . . ."
Bill: "You could not work behind a counter. You could not come down to the level of the shopper."
Don: "I would not want to do that. I don't want to be good at my office work either. . . ."
During the next session Don resumed the attack. Eve had mentioned that her sister was working in a factory although she should have a better job, as she was very intelligent.
Don (to Eve): "This calls out my iconoclastic tendencies. Do you think you are much above average intelligence yourself?"
Eve: "No, but my sister is more intelligent and yet she just sits there in that factory."
Don: "Intelligent people do such things. Perhaps she considers ambitions as puny. My ambitions are far above average jobs. So far above, that I could not even attempt them. Symptoms would prevent me from trying, anyway." Shortly afterwards he revived the previous argument concerning Bill's ability as a salesman. Bill had once failed in a course of salesmanship, and Don now reminded him of it. Surely that was proof that Bill was not a good salesman.
Bill: "I did that course before I started treatment. I felt very inferior then. Now this fear of inferiority has gone. I feel that I have a brain as good as anybody else. And I am not afraid of speaking up as you are."
Don: "I thought you failed through your lack of education. This lack of education has not been changed through group treatment. You are not being educated by the group here."
Bill: "I think this measuring of intelligence is quite a thing with you. You always try to compare your own intelligence with that of other people, and you are not satisfied until you find that you have more."
Eve: "He probably has."
Don (to Bill): "These ridiculous sweeping statements annoy me. You say you have as much intelligence as anybody. What do you mean by that? I have met a lot of dull people, but I have never yet met one who does not think he is intelligent."
Eve: "Perhaps you can tell us what intelligence is?"
Don: "That is difficult to say. All the authorities are at loggerheads about the definition of intelligence." He started to give a lecture on the meaning of intelligence, and I had to interrupt him pointing out that some of the other members had difficulties in following his academic discourse.
The group agreed with me and someone remarked that Don often used difficult words whose meaning could not be easily understood.
Don: "It is never easy to give the meaning of words. There are lots of words that have as many as five meanings. But you can always estimate the meaning of a word from the context. One can have a verbal ability without knowing the exact meaning of words. Verbal ability is often related to general intelligence. I suffer from a lack of verbal facility in practice. I can never get the word I want."
Eve (sarcastically): "You have so many to choose from."
Don: "No. My verbal facility must be bad because I have to look up words. Verbal facility means that the words come natural in speech. When I am reading and I come across a word that has several meanings, and I only know, say, three of them and not more, I have to look it up. I appear to be exhibitionistic with words, but I don't think I am. I could have learned a lot of easy words with one simple sense only, but it is euphuistic words which sound well that I am after." (He made a slip here. He wanted to say euphonic, but euphuistic is unwittingly correct, as it means an artificial and affected style.) "But one can use a lot of skill with words without demonstrating it. With a symptom like mine there

is no possibility of enjoying books. If you have to check punctuation and the sense of the words, it kills any pleasure. . . ."

At the next meeting Don arrived even later than usual. (Coming late was an obsessional symptom with him.) He was reticent through most of the session except for some sarcastic comments which were disregarded by the group. Towards the end of the session he again made some very offensive remarks to Bill. When the meeting ended I asked Don to consider why he should feel so hostile towards Bill. Was he perhaps envious of Bill? Why did he have to emphasize his own superior intelligence? I also made a remark about social intelligence which was unfortunate as it provoked Don.

When the group met again, Don remained stubbornly silent and refused to answer any questions directed at him. Eventually a pause in the conversation occurred. Don fumbled for a cigarette and began to smoke. (This was usually the signal that he would make an effort to speak.) He began to talk very rapidly: "Dr. Taylor mentioned social intelligence last time. I have looked it up. Thorndike's ideas about social intelligence happened about 20 years ago. They were never verified. He has now capitulated to the Spearman School. Spearman's ideas about general intelligence and a factor *g* are now generally accepted. It is now used by Professor Burt to make certain predictions about the decline of general intelligence in this country." He stopped, opened a book he had brought along, and began to read very quickly a passage from a chapter on general trends in psychology. The other members were half amused and half astonished. They did not understand a word of Don's rapid and erudite talk. I interrupted Don to point this out. I also apologized for using the term social intelligence, which had such a doubtful meaning.

Don: "I don't believe in social intelligence—or verbal intelligence."

Eve: "What do you believe in?"

Don: "Spearman's *g*-factor. I find that in practice it is amazing how accurate it works out. Judging from a man's intelligence one can make a shrewd guess of a person's gullibility or perspicacity. The doctor says we should not discuss intelligence theoretically, but I don't think I ever raised the point of intelligence."

Eve: "Yes you did—and you could never leave it. Incidentally, what is your I.Q.? I would be interested."

Don (evasively): "I don't know. Doctor knows. In any case, one can make observations of fact without measuring them. I could have an I.Q. of 80 and still pay homage to Spearman's *g*."

I asked him why he was so annoyed with me.

Don: "This business of social intelligence irritates me. It is a capitalist ideology. It is like the term 'business ability.' I can't bear it. That thing isn't true. I know that business shrewdness, where it exists, depends greatly on innate intelligence. But I don't think that Bill is a better salesman than I am. I think he is gullible."

Another argument developed, which Eve tried to end in a conciliatory way. She told Don that it was a pity he could not make better use of his great intellectual gifts. He might be happier if he could make some contribution to society. Don grew sad and reflective. He remarked that he could never be happy in any society. He had been happy in childhood, at least with his mother. His father had always been a drunken tyrant, but he was only rarely at home. When his mother deserted the family to live with another man, Don had lost all ability for happiness. He ended: 'I can understand Fascist and Communist attitudes—the desire to smash everything. Where there is no inner peace you can give yourself up to any revolutionary idea."

The skirmishes between Don, Bill and Eve continued for a number of sessions. Don forced the group to take notice of him, to refer to him, to listen to his interpretations and explanations. It seemed, for a short while, that he might establish himself as one of the most dominant group members. But when he had gained his point of subordinating Bill, the vigour of his aggressive bid for dominance waned. His neurotic fears prevented him from maintaining the influence on group proceedings which he had achieved during his attack on Bill.

In the present investigation attention has been concentrated on the pattern of friendliness and the hierarchy of dominance. These group structures

appear to be fairly stable and enduring as long as the group composition remains unaltered. Minor variations and fluctuations do, however, occur according to the changing mood of the group, the topics under discussion, and differences in individual group response and development. These variations cannot be elicited by means of a questionnaire, but they are revealed through group observation. In a fuller assessment of the social interactions in groups it will also be necessary to take account of other interpersonal trends and their concerted effects on group proceedings.

Summary.

A therapeutic group of nine male out-patients has been investigated by means of a questionnaire in order to elicit the pattern of friendliness and the hierarchy of dominance.

A mathematical and clinical analysis of the data has been carried out.

The relationship between the status of popularity or dominance and individual or group characteristics has been discussed.

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