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Behavioural Group Therapy: A Controlled Clinical Study

By ROBERT PAUL LIBERMAN

The clinical research reported here has two thrusts or purposes: one theoretical and one practical. The theoretical question can be stated: Is psychotherapy in general, and group psychotherapy in particular, a lawful, directive, and predictable process that can be understood from a behavioural or learning point of view? The second question and the more practical and down-to-earth one, is whether analyzing group therapy from a learning point of view can suggest and direct our attention to practical improvements in the technical work that we carry out as group therapists, whatever our theoretical persuasions.

The framework of the research centres on two major areas: one, behavioural or operant conditioning, the other, small group dynamics. Operant conditioning is a term that has appeared in the context of the emerging field of behavioural therapy. It may have rather negative connotations to clinicians, but in actuality has a very simple and neutral derivation. Operant behaviour refers to behaviour that operates on the environment to produce certain consequences. Consequences which strengthen or increase the frequency or intensity of behaviour are called reinforcers. Familiar reinforcers in everday life are such things as money, which strengthens work behaviour; academic grades, which serve to reinforce study behaviour; and food and sexual gratification which are consequences that reinforce eating and amorous rituals respectively. The most important reinforcer for humans, however, is the attention and responsiveness of other human beings. In psychotherapy the patient's behaviour produces certain consequences. The patient generates consequences in the behaviour of the therapist. The therapist shows attention, concern, interest, approval, and empathy by the use of clarifications, interpretations, questions, and other verbal and non-verbal cues. When these reactions of the therapist are focused and consequent on particular behaviours of the patient they can reinforce these behaviours for the patient, or increase the likelihood of their occurrence in the future.

There is a growing consensus, among clinicians and experimental psychologists (Krasner, 1962) alike, that psychotherapy is a learning process. For instance, the psychoanalyst Marmor (1966) has said: '. . . what goes on in the psychotherapeutic working-through process is a kind of conditioned learning in which the therapist's overt and covert responses act as reward-punishment cues which reinforce more mature patterns of behaviour and inhibit less mature patterns.'

While operant conditioning provides us with principles to understand the *process* of group therapy, it does not help us choose the kinds of *behaviour* that we would like to increase or decrease in our work with patients. In thinking about the choice of relevant behaviour to focus on in this group therapy research, I realized that two general possibilities existed: one was to deal with individual problems that patients in the group presented, describe them specifically in behavioural terms, and work toward the appropriate goals (Shapiro and Birk, 1967); the other was to choose problems and goals that were common to all the patients in the group. The latter option was taken in the present research.

In reviewing the literature on training groups, sensitivity groups, and therapy groups, it became apparent that there are three major group dynamic dimensions that universally arise in the development of these groups (Bennis, 1964; Bion, 1968; Semrad *et al.*, 1963). One is the dimension of solidarity, affection, love, or cohesiveness; this dimension covers how people in the group express and receive

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affection. Two other dimensions, which will not be described in this short report of a much larger piece of research, are the dimension of dominance and submission, or power; and the dimension of task orientation (Liberman, 1970). The rest of this paper will focus on the dimension of cohesiveness, which is one of the most important and central characteristics in the development of all non-directively led groups.

In addition to being an important dimension of group dynamics, cohesiveness has certain clinical relevance to patients who are referred for group therapy. Most patients who are so referred, particularly on an out-patient basis, have major problems in the area of interpersonal competence and comfort, and hence would presumably benefit from a climate of enhanced cohesiveness. This paper will report the results of the study in which behavioural principles were systematically used to facilitate the development of cohesiveness in a therapy group.

Methods

Two groups were formed from the waiting list of the out-patient clinic of the Massachusetts Mental Health Center. The groups were matched on a variety of attributes, such as age, sex, marital status, social class, diagnosis and previous treatment. The groups were composed of seven non-psychotic members each and met for 37 weekly, seventy-five-minute sessions. The patients were diagnosed as borderline depressive, hysterical, and schizoid. Some had been hospitalized in the past. Most of the patients could be considered lower-middle class.

The second-year residents who served as group therapists were matched for their interest and experience in group therapy and on personality assessments made by their supervisors and chief residents using the Interpersonal Checklist (Leary, 1956). The therapists were rated by the patients in their groups at three-monthly intervals on the Interpersonal Checklist. Both therapists were viewed very similarly by their respective patients—they were seen as strong, dominant figures who were relatively neutral on the affection dimension. The comparison group therapist conducted his sessions using spontaneous and intuitive interventions which were based on the prevailing group-analytic approach taught at this hospital. He would primarily reflect the group's discussion back to the group members themselves and occasionally would focus on individuals and the problems that they presented. The therapeutic climate at Massachusetts Mental Health Center is primarily psycho-analytic in orientation, but in the training of group therapists a group-dynamic or group-centred emphasis is encouraged.

The experimental group therapist was trained to use his role as leader and his positive therapeutic relationship with group members in a systematic fashion to focus on and to build up expressions of cohesiveness among the group members. His interventions were aimed at indicating his attention, approval and interest in the group members' expressions of mutual support, sympathy, concern, and affection. He would use his attention in a contingent fashion by re-phrasing, paraphrasing or otherwise indicating his interest in expressions of solidarity in the group.

The development of cohesiveness in the group was measured by live scoring of group interaction using two content analysis codes on alternate sessions: Interaction Process Analysis IPA code (Bales, 1950) and a modification of the Sign Process Analysis (SPA) code (Mills, 1964; Mishler and Waxler, 1968). In addition, tape recordings of the sessions were transcribed and a more detailed dissection of the therapist's impact on the group members was made by analysing patient-therapist-patient sequences of interaction. A code was developed which focused on the reinforcements or acknowledgements and the prompts made by both therapists, in the area of cohesiveness. A reinforcement was defined as an intervention in which the therapist acknowledged a cohesive act made by a group member in that session, whereas a prompt was defined as the therapist's attempt to elicit a cohesive act in a group member who had not made one earlier in the session. The coding was performed by an assistant who remained 'blind' to the conditions of the

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research. There were also sociometric questionnaires, personality inventories and measures of symptomatic distress, which will be reviewed in the Results section. A fuller description of the methods used can be found in another publication (Liberman, 1970a).

Results

The first finding to be examined is whether or not the experiment 'took'; that is, did the systematic behavioural training of the experimental therapist actually lead to his providing more prompts and reinforcements for cohesiveness and greater cohesive behaviour among members in his group? Figure 1 shows the cumulative record of cohesive prompts and reinforcements offered by both therapists and the cohesive behaviour shown by both groups. The data reveal a statistically significant difference between the two groups, and the two therapists with the experimental therapist and group showing much greater activity in the dimension of cohesiveness than the comparison therapist and group ($o < o{\cdot}o1$, sign test).

To focus more closely on the relationship between the therapist's prompting and reinforcing cohesiveness and the cohesive response on the part of the group members, a more detailed analysis was performed. In Fig. 2 is shown the data from four sessions, three from the experimental group and one from the comparison group. They trace the variation during these sessions of the therapist's prompting and reinforcing cohesiveness and the group members' response in this dimension, and reveal a very close qualitative or directional correlation between the therapist's behaviour and the group members' expression of cohesiveness. As the therapist increases his activity in this dimension so do the patients, and when he decreases his activity the patients decrease also. The data from the first two figures are taken from the SPA content analysis code.

Figure 3 elucidates the influence of the therapist on individual group members and utilizes data taken from the IPA content analysis code. This time, focusing on selected individuals from each group, the same relationship is found, the therapist's and patients' behaviour being closely correlated over successive sessions. It is important to emphasize that the impact of the therapist on the group holds for *both* groups, and represents a general principle of reinforcement responsible for behavioural change, regardless of the theoretical orientation held by the therapist.

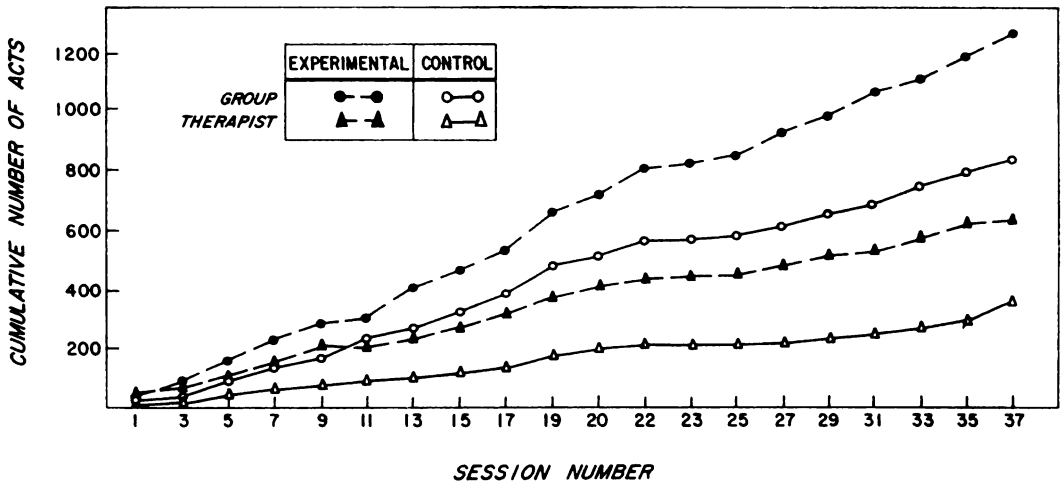


Fig. 1.

Positive affect expressed among patients (SPA code) and reinforcement and prompting of cohesiveness by therapists

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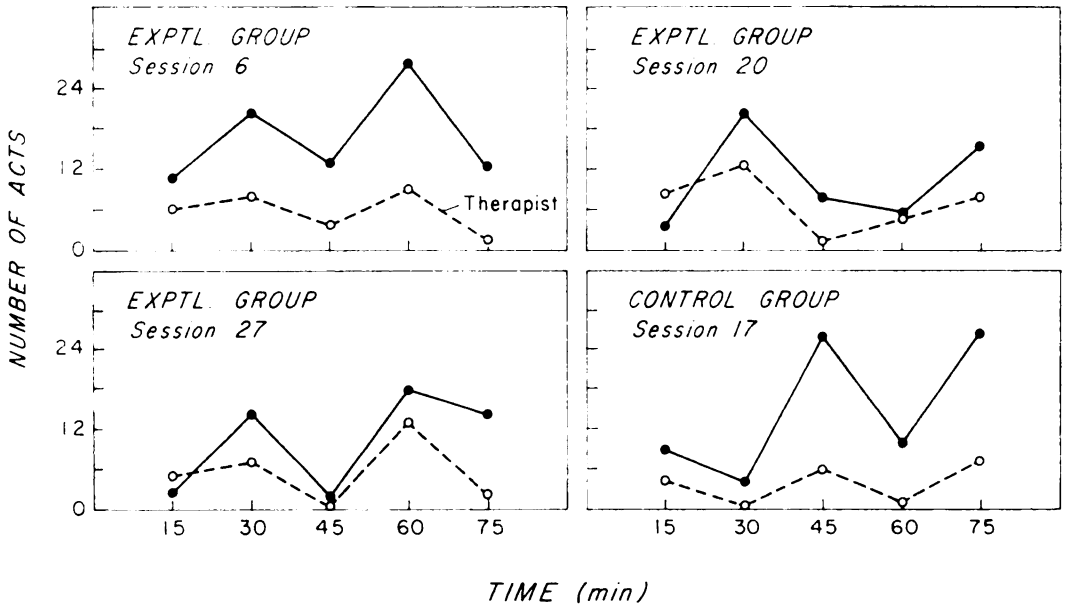


FIG. 2.

Influence of therapist's reinforcing and prompting cohesiveness (dotted line) on group members' expression of cohesiveness as measured by Sign Process Analysis (solid line)

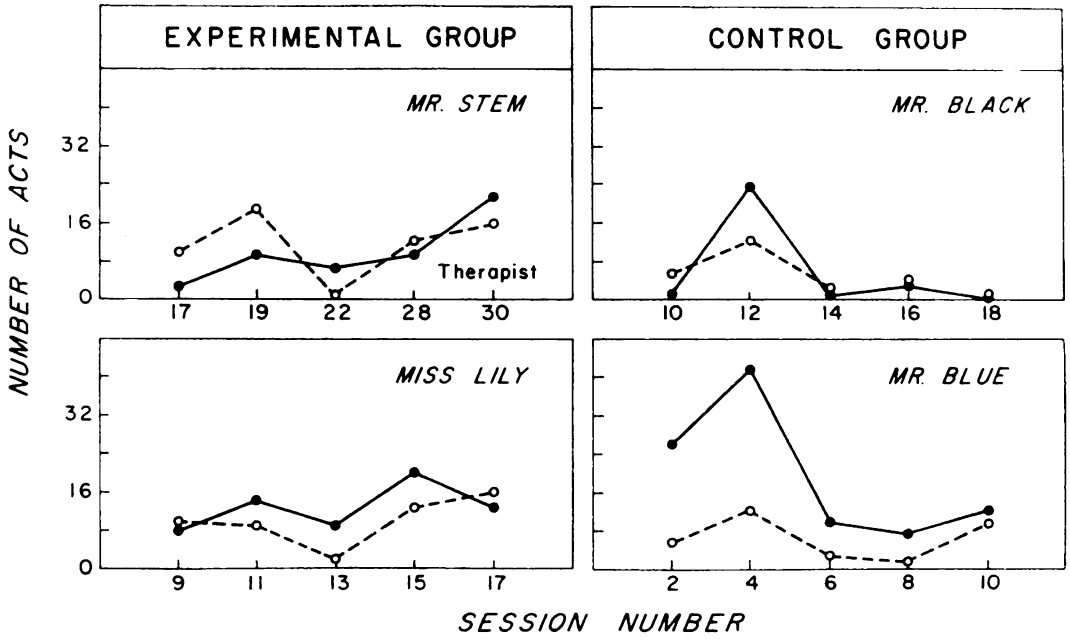


FIG. 3.

Reinforcement + prompting cohesiveness (dotted line): IPA categories 1 + 3 (solid line)

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To prove the causal direction of the therapist influence on the group, a change in the experimental therapist's contingencies of attention was made for four sessions midway through the therapy. During sessions 22 to 25 the experimental therapist was programmed to change his focus of attention from *cohesiveness* among the group members to individual members' positive self-references. Figure 4

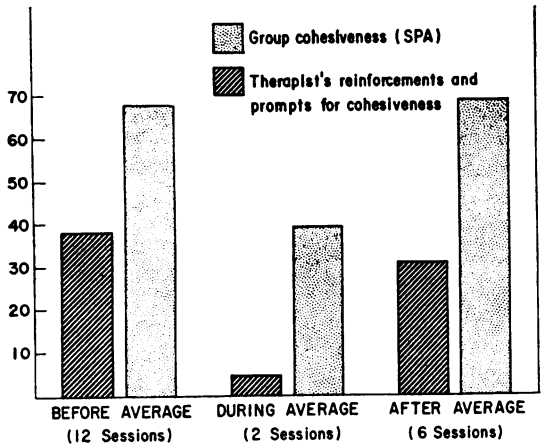


FIG. 4.

Effect of changing the contingencies of reinforcement and prompting by the therapist on expressions of cohesiveness by group members (Experimental Group). The bars represent the per session average of frequency of acts during the three phases

presents the therapist's and patients' activity in the area of cohesiveness before, during and after this switch in contingencies. We can see a very marked diminution of cohesive behaviour among the patients during the two sessions coded by SPA when the therapist was avoiding the reinforcement of cohesiveness and attending instead to individuals talking about themselves.

We have so far demonstrated the clear relationship between what the therapist does in the group and the correlated response by the group members, but what clinical significance does this have? The patients were asked every two weeks to fill out sociometric questionnaires which reflected the degree of liking that they felt for one another. The results indicate that while both groups were not significantly different during the first half of the year the experimental group showed much greater solidarity during the last half. The group cohesion index, reflecting the number of pairs in the group that expressed strong mutual liking for each other, was three times higher in the experimental group during the last half of the therapy sessions ($p < 0{\cdot}05$, Mann Whitney Test).

The Interpersonal Checklist required each person to rate himself and everyone else in the group on a variety of interpersonal attributes before the therapy began and at three-month intervals afterwards. The Inter-personal Checklist, part of a multi-level battery of personality tests, is scored for two dimensions of interpersonal behaviour. These two dimensions, which are shown on the grid in Fig. 5, are dominance-submission and love-hate. We can see that the vectors of change for the patients (rating themselves and rated by the therapist) points toward the dominance and love end of these dimensions for the experimental group but toward the hate and submission end of the dimensions for the comparison group. These change arrows represent the difference in score between the end of the first three months of therapy and at the time of termination. The direction of change, which approached statistical significance, is validated by the results of another personality measure, the Bales' Three Dimensional Personality Schema, which will be reported in another publication (Liberman, 1971).

Figure 6 reveals other data from the administration of the Interpersonal Checklist. Three indices were calculated for the trimester evaluations made by the patients; self-deception, conscious identification, and misperception. Self-deception refers to the difference between how each person rates himself and how all the other members in the group on the average rate him. Conscious identification reflects the degree to which a person rates himself in common with all the others in the group; that is, the degree of closeness that each person sees himself having in relation to the others in the group. The index of misperception refers to how each individual rates each other person in the group in comparison to how the others in the group on the average rate each person.

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In comparing the first trimester with the last trimester, the experimental group shows a decrease in self-deception, a decrease in conscious dis-identification, and a decrease in misperception while the opposite holds for the comparison group. These differences are statistically significant at the 0·01 level (t test).

Conflicts among levels of personality, or what we might consider intrapsychic conflict, are portrayed in Fig. 7. The various levels of personality are reflected by results from tests in the multi-level battery of personality measurement developed by Leary (1956). In this multi-level battery the MMPI reflects how a person presents himself to others, the Interpersonal Checklist reflects how a person subjectively sees himself relating to others, and the TAT reflects how a person fantasies his relation with others. These tests are also scored for the two dimensions of dominance-submission and love-hate. Using certain mathematical computations, indices can be derived from the differences between these individual tests. The indices of self-deception, repression, self-

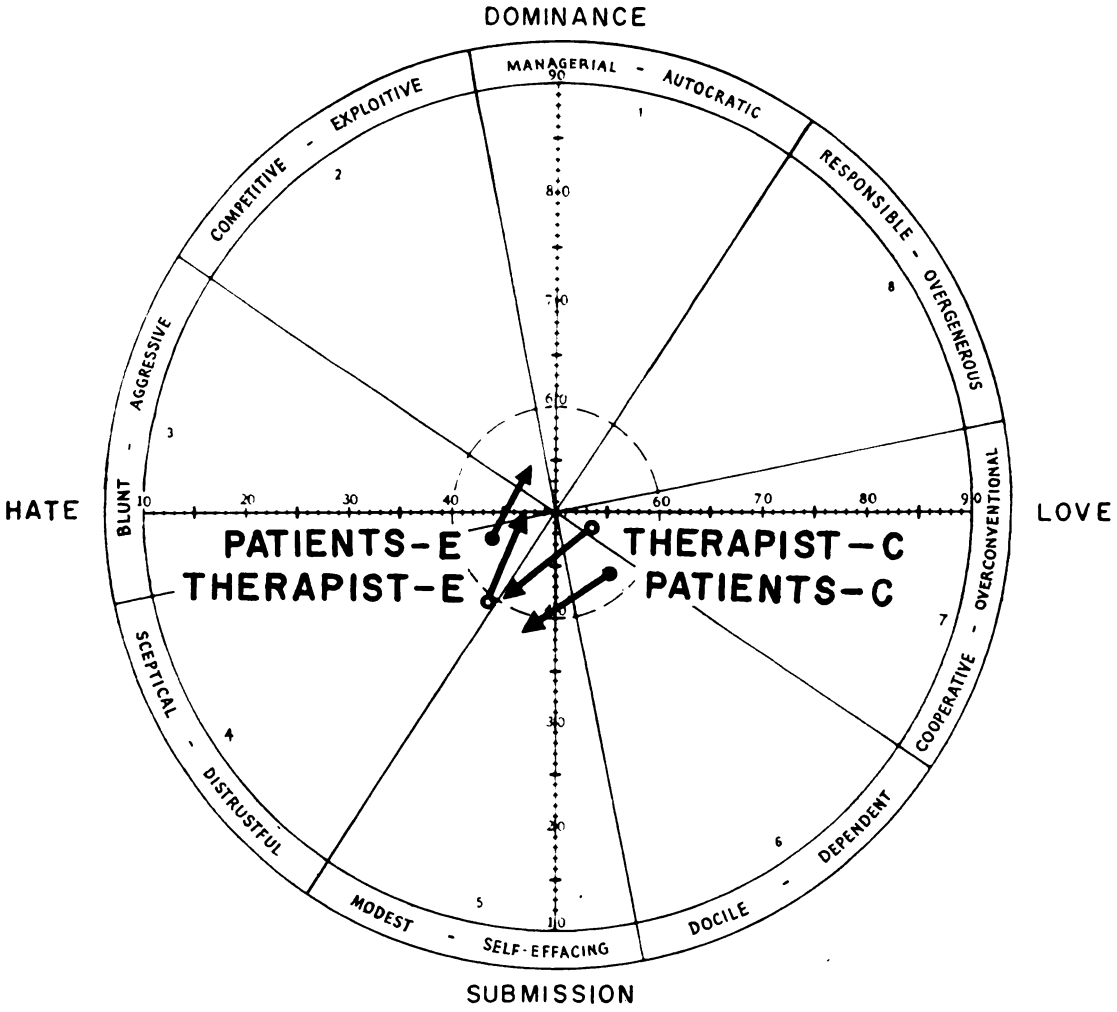


FIG. 5.
Interpersonal Diagnosis Multi-Level Personality Pattern (Leary)

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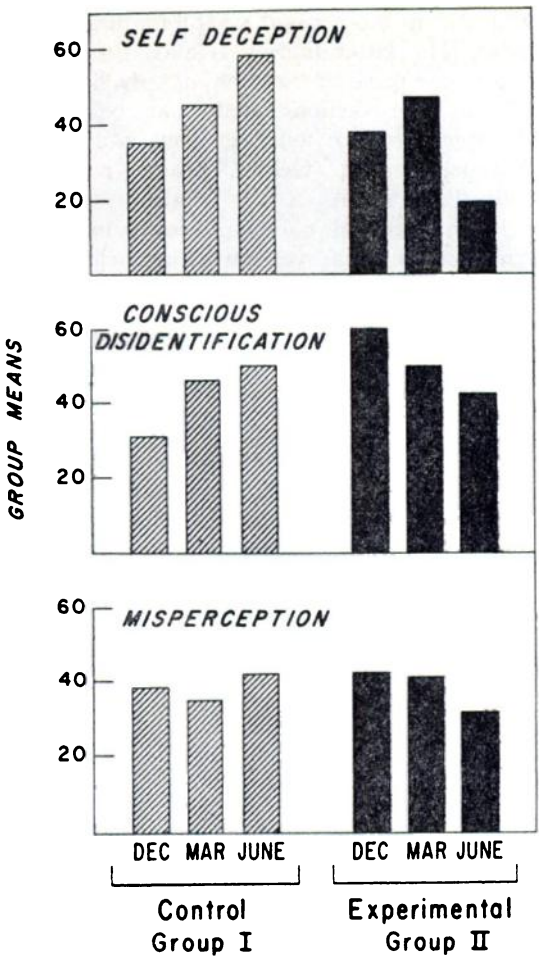


FIG. 6.

Sociometric Indices: Interpersonal Check list

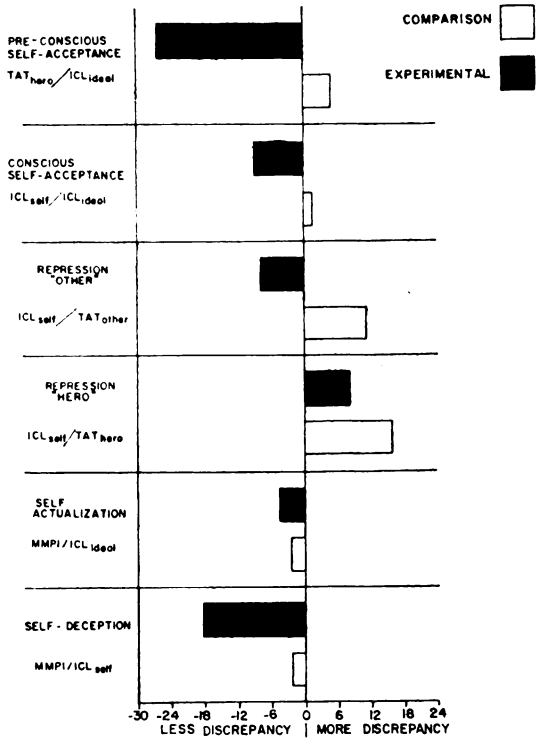


FIG. 7.

Inter-level Variability Indices (Leary). Changes] in discrepancy scores, Group averages, June 1967–August 1966

acceptance and self-actualization all reveal less inter-level discrepancy or intrapsychic conflict at the time of termination in members of the experimental group as compared to those in the comparison group ($p < 0{\cdot}025$, t test averaged across all six indices). In other words, there was a consistent tendency for the experimental group patients to move toward greater inter-level consistency than for patients in the comparison group from the beginning to the end of therapy.

The final question and perhaps the most important is that of symptom change. It is all well and good to demonstrate a lawful relationship between the therapist's behaviour and that of the group members, and to show that a more behavioural, systematic approach to cohesiveness can produce more impressive personality changes; but a more important question is: does this more systematic approach also lead to more effective or efficient alleviation of symptoms? Patients were asked to fill out a Target Complaint Scale at the beginning and after every three months of therapy. These target complaints were essentially their chief complaints, and each individual averaged three problems that they wanted help with from the group therapy. These problems ranged from depressive symptoms to difficulties in getting along with one's spouse, and to wanting to feel more comfortable in social situations. The patients rated the intensity of their complaints on a 12 point, thermometer-like scale at each of the intervals. We see in

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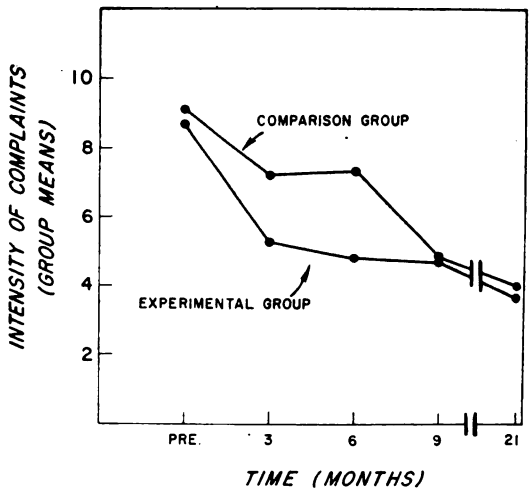


FIG. 8.
Target Complaints—change over time

Fig. 8 both groups on the average begin at the same level with equal amounts of improvement; however, the experimental group patients show a much more rapid improvement in their complaints than the comparison group patients. The differences at three months and six months between the two groups are statistically significant at the 0·01 level (t test). These findings are replicated by another measure of symptomatic distress, a Symptom Checklist which is an eight-item questionnaire reflecting various psychosomatic problems such as sweaty hands, insomnia and palpitations. Again we see in Fig. 9 a more rapid resolution of symptom distress in the experimental group than in the comparison group.

DISCUSSION

Group therapy, as evaluated by this research, is governed by lawful principles of learning in which the therapist exerts an important influence on the behaviour of the patients. The research further indicates that a therapist using prompts and reinforcements in a conscious, systematic way can facilitate the development of cohesiveness in a therapy group. This more systematic approach to the practice of group therapy also results in more personality change in dimensions relevant to cohesiveness and also to more rapid symptomatic improvement. The latter finding is a confirmation of other comparative studies of psychotherapy which have demonstrated that behavioural therapies produce a more rapid and efficient therapeutic gain (Gelder, Marks, and Wolff, 1967; Paul, 1966).

How increased cohesion results in greater symptomatic improvement is not clear from the data. There was no significant correlation between the amount of symptomatic improvement experienced by individuals and the amount of cohesiveness they expressed. We might speculate that the greater warmth and support in the experimental group provided an 'emotional climate' in which the patients felt more accepted by each other and hence more open to influence for change in desired directions. Experiments in the small group field indicate that members of cohesive groups experience more anxiety reduction. Since anxiety is central to many of the symptoms held by the patients, a decrease in anxiety may have led to the more rapid symptomatic improvement in the experimental patients.

As the group therapy proceeds the patients gradually develop greater independence from the therapist. This is shown in Fig. 4 where the therapist decreases his prompts and reinforcements for cohesiveness to almost zero while the group members reduce their expres-

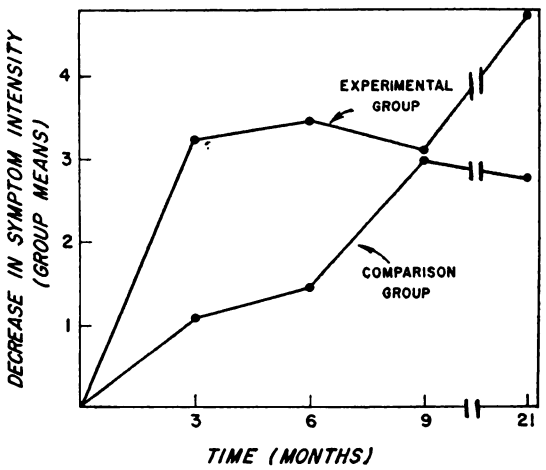


FIG. 9.
Symptom Check list—Improvement over time

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sions of cohesiveness to a lower level but one which is not proportionately as low as the therapist's. The explanation for this lies in the fact that as the group ties increase, members become reinforcing for each other. The norm of cohesiveness, which has become embedded in the culture of the group, is a behavioural goal for which members reinforce each other.

Other data from the study indicate that in the experimental group, where cohesiveness was particularly facilitated, independence from the therapist reached a higher level than in the comparison group. While there were no significant differences between the two groups during the first half of the year, in the second half of the year the experimental group showed a significant shift in the direction of aiming their remarks toward each other, in contrast with remarks aimed at the therapist. The experimental group decided to meet together without the therapist during the two weeks that the therapist was on vacation, while the comparison group spontaneously chose not to meet during their therapist's vacation. As the year went on the experimental group members took over more responsbility for contacting absent members, while this development did not take place in the comparison group.

Some practical suggestions for more effective conduct of group therapy emerged from a detailed review of the transcripts of the sessions. These suggestions derive from an analysis of both therapists, and should be viewed as generally applicable to all therapists regardless of their theoretical orientation. They are also relevant for the practice of individual and family therapies.

1. When the therapist spoke *directly* to a patient, using the personal pronoun 'you', he was much more likely to get his intended response from the patient than if he spoke *indirectly about* the patient using the patient's name.

2. When the therapist reinforced or acknowledged cohesive behaviour *immediately*, he was much more likely to elicit the wanted response in the patient than if he waited for some time and allowed other speakers to intervene between his own intervention and the target statement he was referring to.

3. When interventions were *concise* and clearly focused on a single issue they were more effective in getting the desired result than when many messages were mixed in the same intervention. This has important implications for the length of interventions by therapists, and suggests that brief clarifications and interpretations which are to the point are more effective than lengthier and more prolix interventions.

4. A tendency occurred for *satiation* of the group in the area of cohesiveness. When either therapist issued more than 26 prompts and reinforcements for cohesiveness in any session both groups showed a decrement or falling off of responsiveness in this dimension. The satiation point for any other issue would have to be discovered empirically by a therapist.

5. *Reinforcing* or acknowledging statements already said seemed to be more effective than *prompting* or eliciting novel statements by a patient, particularly in areas that were sensitive and difficult to verbalize. This finding held more strongly for another group dynamic dimension studied by the research, hostility and disappointment expressed to the therapist, than it did for the area of cohesiveness.

Summary

Two matched therapy groups in an outpatient clinic were studied for nine months, from start to termination, in terms of process and outcome. In the experimental group, the therapist was trained to use techniques of social reinforcement to facilitate the development of inter-member *cohesiveness*. In the comparison group, the therapist, who was matched by personality with the experimental group's therapist, used a more psychodynamic, intuitive, group-centred approach in dealing with the group.

The results indicate that the patients in the experimental group showed significantly more cohesiveness and greater personality change than those in the comparison group. Data from the scoring of ongoing group interaction as well as from sociometric questionnaires indicate that patients in the experimental group also developed more independence from the therapist than did patients in the comparison group. The potency of the therapist in shaping and

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modifying group dynamic behaviours was established by the data for both groups, whether or not the therapist was programmed or aware of the contingencies of his interventions.

References

BALES, R. F. (1950). *Interaction Process Analysis*. Cambridge.

BENNIS, W. (1964). 'Patterns and vicissitudes in T-group development.' In *T-Group Theory and Laboratory Method*, ed. L. P. Bradford *et al.* (Eds.) Wiley: New York.

BION, W. R. (1968). *Experience in Groups*. London: Tavistock Publications.

GELDER, M. G., MARKS, I. M., and WOLFF, H. H. (1967). 'Desensitization and psychotherapy in the treatment of phobic states: a controlled inquiry.' *British Journal of Psychiatry*, **113**, 53–73.

LEARY, T. (1956). *Interpersonal Diagnosis of Personality: A Functional Theory and Methodology for Personality Evaluation*. New York.

LIBERMAN, R. (1971). 'Reinforcement of cohesiveness in group therapy.' *Archives of General Psychiatry*, in press.

—— (1970a). 'A behavioural approach to group dynamics.' *Behaviour Therapy*, **1**, 141–75 and 312–27.

KRASNER, L. (1962). 'The therapist as a social reinforcement machine.' *Research in Psychotherapy* (ed. H. Strupp and L. Luborsky. Washington, D.C.: American Psychological Association, Pp. 25–40.

MARMOR, J. (1966). 'Theories of learning and psychotherapeutic process.' *British Journal of Psychiatry*, **112**, 363–6.

MILLS, T. M. (1964). *Group Transformation: An Analysis of a Learning Group*. Englewood Cliffs, New Jersey.

MISHLER, E. G., and WAXLER, N. (1968). *Interaction in Families*. New York.

PAUL, G. L. (1966). *Insight versus Desensitization in Psychotherapy*. Stanford, California.

SEMRAD, E. V., KANTER, S., SHAPIRO, D., and ARSENIAN, J. (1963). 'The field of group psychotherapy.' *International Journal of Group Psychotherapy*, **13**, 452–75.

SHAPIRO, D., and BIRK, L. (1967). 'Group therapy in experimental perspective.' *International Journal of Group Psychotherapy*, **17**, 211–24.

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