

SOCIAL ATTITUDE (CALIFORNIA F SCALE) AND CONVULSIVE THERAPY

ROBERT L. KAHN, PH.D.,¹ MAX POLLACK, PH.D. AND MAX FINK, M.D.

Studies of the mode of action of convulsive therapy in altering behavior have been under investigation by a variety of experimental methods in our laboratory for several years. Early studies demonstrated a relationship between clinical evaluations of improvement and the degree of altered brain function as measured by the amobarbital test (15) and the electroencephalogram (5). Personality patterns related to a favorable therapeutic outcome have been defined by family interviews (13) and projective techniques (14). Behavioral changes have been measured by complex visual and tactile perceptual tasks (6) and by analyses of changes in syntactical aspects of language (12).

More recently we have become increasingly aware of the relation of sociopsychological factors to differences in both referral for, and response to, convulsive therapy. In a study of the entire adult in-patient population of Hillside Hospital it was found that those patients referred for convulsive therapy were significantly older, more likely to have been foreign-born, had less education and higher scores on the California F Scale than those patients who received psychotherapy alone (17). Of those patients receiving convulsive therapy, a favorable therapeutic evaluation of *recovered* or *much*

improved was most likely in those who were older, more poorly educated, foreign-born and with higher F scores (18).

The aim of the present investigations was to study the convulsive therapy process further by the use of the California F Scale (1). Although promulgated in a setting where interest was focused on prejudice and authoritarianism, the F Scale was designed to evaluate psychological aspects, such as conventionalism, rigidity and stereotypy, related to the manifestation of these social attitudes.

It was our specific purpose to determine: 1) what the F Scale measures in a psychiatric population, and 2) how response to the F Scale varies with change in brain function.

METHOD

Population: These studies have been conducted at Hillside Hospital, a private, non-profit 200-bed psychiatric hospital in New York City admitting voluntary patients with "early and curable mental illness." Psychoanalytically-oriented psychotherapy is the treatment of choice for all patients, with somatic therapies (convulsive, insulin coma and drug therapies) regarded as ancillary, but available when needed. The in-patient population consists mainly of middle-class Jewish patients, with a high school education, between the ages of 18 and 40. Most patients are classified into the diagnostic categories of schizophrenia, psychoneurosis, manic-depressive and involutional psychosis.

In these studies we have used a ten-item modification of the standard F Scale (8).

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TABLE 1
Scores on Conventional and "Reverse" F Scales

Dichotomized Groups	N	Mean Score Conventional Scale	Mean Score "Reverse" Scale	Diff.	t
10-37	76	26.3	51.5	+25.2	20.3*
38-70	79	47.4	48.1	+0.7	0.6

* Significant at .001 level

The procedure consists of having the subject read ten statements and indicating to what extent he agrees or disagrees with each, *i.e.* a little, pretty much, or very much. The score for each item ranges from one to seven, and the total score range is 10 to 70, with high scores indicating greater agreement with the statements. The statements are extreme, uncritical or stereotyped expressions, such as: "No sane, normal, decent person would ever think of hurting a close friend or relative" and "If people would talk less and work more, everybody would be better off."

RESULTS

What the F Scale measures in this population: the "reverse" F Scale. In this study the entire in-patient population was first tested with the conventional scale, then retested one month later with a "reverse" scale (2). In the "reverse" scale the same items are used, but stated in opposite terms to the original. Thus, the first example cited above is changed to read, "A sane, normal, decent person might have to hurt a close friend or relative." The "reverse" scale is scored in the same manner as the regular scale, with high scores reflecting greater agreement.

The relation of the scores on the conventional to the "reverse" scales is shown in Table 1. The patients were divided into two groups according to the median score on the conventional scale. Those patients who made low scores initially, indicating predominant disagreement with the statements, showed a significant increase in score on the "reverse" scale, indicating that they were now in agree-

ment with the statements. In contrast, the patients who made high scores initially showed little change on retesting, indicating that they agreed with the statements to the same extent even when their meanings were reversed.

Change in F Score with convulsive therapy. In a second study, 69 consecutive hospitalized patients referred for convulsive therapy were given the F Scale in the week prior to treatment, on the day following the 12th treatment, and two weeks after the termination of treatment. These patients were divided into two groups; an experimental group of 59, and a control group of ten patients randomly selected from the referrals. In the experimental group all patients received grand mal convulsive therapy, while the control group received subconvulsive electro-stimulation only. All patients were treated three times a week, for a minimum of 12 treatments.

The degree of physiologic change during treatment was determined by quantitative analyses of delta activity in the EEG, using techniques previously described (5). EEG records were obtained weekly and the records taken nearest the 12th treatment were measured for the degree of induced slow wave activity (the per cent time occupied by waves of 6 cps or slower for 66 seconds of recording from the anterior temporal-vertex leads).

The changes in F score during convulsive treatment are shown in Table 2. There was a mean increase of +5.7 in F score during

TABLE 2
Effect of Convulsive Treatment on F Score

	N	Mean F Score			t
		Pre-Treatment	During Treatment	Mean Difference	
Convulsive Group	59	45.3	51.0	+5.7	2.02*
Control Group	10	48.7	49.2	+0.5	0.02

* Significant at .05 level

treatment, a difference significant at the five per cent level of confidence. In contrast, the control group showed a statistically insignificant change during the same period.

The effect of convulsive therapy on the F score was further demonstrated by an analysis of seven patients, originally in the control group, who were subsequently placed on a regular course of convulsive therapy. On retest after 12 control treatments their scores were unchanged, with a mean difference from the pretreatment score of +0.1. After 12 convulsive treatments, however, these patients showed a significant mean increase of +9.1.

Adequate EEG records at the time of the 12th treatment were obtained for 54 patients. For this analysis the records were divided into two groups according to the degree of slow wave activity: a high delta index group in whom slow wave activity appeared in 40 per cent or more of the selected leads, and a low delta index group in whom the slow wave activity was less than 40 per cent. Changes in F scores during treatment for the two groups are shown in Table 3.

TABLE 3
Change in F Score and Degree of Induced Cerebral Dysfunction

Degree of Slow Wave Activity	N	Pre-Treatment	During Treatment	Mean Difference	<i>t</i>
High Delta Index	27	43.9	52.5	+8.6	2.3*
Low Delta Index	27	45.6	49.0	+3.4	0.8

* Significant at .05 level

The patients with high degrees of slow wave activity had a mean increase in F score of +8.6, significant at the five per cent level of confidence. Those patients with low delta indices showed a relatively small increase of +3.4. While the increase in scores in the low delta activity group was statistically insignificant, it was greater than that of the control group (Table 2).

TABLE 4
Pre-Treatment and Post-Treatment F Scores

	N	Pre-Treatment	Post-Treatment	Mean Difference	<i>t</i>
High Delta Index	21	42.2	40.6	-1.6	0.4
Low Delta Index	16	42.6	42.1	-0.5	0.1

F scores were obtained in 44 patients two weeks after the last treatment (Table 4). The mean difference between pre- and post-treatment scores was statistically insignificant. Furthermore, the same pattern of a small decrease in score was found for both the high and low delta activity groups.

DISCUSSION

These observations demonstrate the relevance of the F Scale to the convulsive therapy process. An understanding of these relationships requires examination of the psychological factors reflected by the F Scale in our population.

The observations on the "reverse" F Scale indicate that those patients who disagreed with the original statements (low F score) were responding to the content of the statements. This was shown by the high degree of agreement with the reverse statements. Those patients who agreed with the original statements (high F score), however, continued to agree when the statements were reversed. Evidently, these patients were not responding to the content of the statements, but demonstrated a more generalized reaction.

There have been several studies on non-psychiatric populations using a "reverse" F Scale, with conflicting results. Thus, Christie, Havel and Seidenberg (3) have found a consistent response to content in original and reverse scales, *e.g.*, agreeing to one and disagreeing with the other, while Jackson, Messick and Solley (10) report a positive correlation between agreement on the two scales. In part, these differences may be accounted for by differences in the form of the reversed

scale. Jackson and Messick (9) indicated that Christie *et al.* (3) modified the language form of the original scale and reversed the content, while Jackson *et al.* (10) retained the extreme, cliché-ridden style of the original scale. Jackson and Messick indicate that the response pattern to the F Scale may be interpreted in terms of response style rather than specific item content. On the basis of the data from our population there is a difference between the high and low scorers with respect to the extent that cognitive style affects their response. The high scorers who agree with both forms of the scale show a consistent style of response acquiescence, overgeneralization and conforming to socially desirable standards. Those who scored low on the original scale, however, did not show the converse—a consistent pattern of negativism or social non-conformity. Rather, they altered their style to agree with the content when the statements were reversed. Thus, low F score patients were characteristically more critical and discriminating persons, while those with high F scores were more undifferentiating and stereotyped in their reactions.

With this conception of the F Scale, the findings in convulsive therapy may be considered. In the selection of treatment in this institution, those patients receiving convulsive therapy had significantly higher scores than those receiving psychotherapy only (17). That this observation is not simply a reflection of diagnosis is seen in the differentiation by the F score of the selection of treatment even among those patients classified as psychotic depression. The selection of treatment thus seems related to psychological processes reflected in the F Scale. Subjects with high F scores, with stereotypy of thinking and difficulty in introspection, often present a behavioral pattern incompatible with the establishment of the type of interpersonal relationships required in psychoanalytically-oriented psychotherapy.

The favorable evaluations of therapeutic

response to convulsive therapy in patients with high F scores may be related to personality attributes. The psychological processes reflected in the F Scale are similar to those personality factors previously found to be related to a favorable response to such treatment. In structured family interviews it was observed that the favorably rated patients had personality patterns characterized as nonempathic, nonintrospective, nonverbally communicative, and highly conventional and stereotyped, with little imaginative or creative capacity (13). Consistent patterns have been shown in Rorschach studies indicating that good prognosis is related to a small number of responses, absence of human movement and little diversification of content (7, 14).

The F score increases significantly with convulsive therapy with the extent of increase related to the degree of altered brain function, as measured by the degree of induced EEG slow wave activity. This relation of change in behavior to physiological change is an observation that has been consistently noted in convulsive therapy patients (5). The increase in F score during treatment may have been even more marked than actually observed. Several patients of foreign birth and little education had maximum or near maximum scores prior to treatment, thus eliminating or reducing the possibility of an increase on retesting.

The change in score with altered brain function is consistent with previous observations on the behavioral effects of convulsive therapy. In accord with our conceptual framework, greater agreement with F Scale items during treatment is related to increased stereotypy and difficulty in discrimination, as well as to increased acquiescence. This is part of a general process which has been noted in linguistic, perceptual and clinical behavioral measures. In their language, convulsive therapy patients show increased denial, evasion, qualification and use of clichés and stereotyped expressions

(12). They also manifest increased repetitiveness of words (11), difficulty in complex visual and tactile perception (6) and figure-ground discrimination (16). Clinically, they are characteristically more compliant and acquiescent and try to please the examiner (4).

SUMMARY

A measure of social attitude, the California F Scale, has been utilized in studies of the convulsive therapy process. In a voluntary psychiatric hospital it was noted that patients referred for convulsive therapy had significantly higher F scores than those receiving psychotherapy only. Among the patients receiving convulsive therapy, those with the higher initial F scores were evaluated as showing the best clinical results. With treatment there was a significant increase in F score, with the increase related to the degree of altered brain function. Following treatment the scores returned to their original level.

Comparison of results with a conventional and "reverse" F Scale demonstrated that patients with low F scores respond to the content of the questionnaire, while those with high F scores showed a generalized pattern of agreement independent of the content.

These results are interpreted in terms of the psychological processes measured by the F Scale. High-scoring patients are considered to be stereotyped in their thinking and to have difficulty in introspection—behavior which is incompatible with psychoanalytically-oriented psychotherapy, rendering them more liable to referral for convulsive therapy. With treatment, such patients are also more likely to develop the language patterns of denial and use of clichés which are the cues for evaluations of clinical improvement. The increase in F score with treatment is comparable to other types of behavioral change, such as increased acquiescence, increased difficulty in figure-ground

discrimination, and increased stereotypy of language.

REFERENCES

1. ADORNO, T. W. ET AL. *The Authoritarian Personality*. Harper, New York, 1950.
2. BASS, B. M. Authoritarianism or acquiescence? *J. Abnorm. & Social Psychol.*, **51**: 611-623, 1955.
3. CHRISTIE, R., HAVEL, J. AND SEIDENBERG, B. Is the F Scale irreversible? *J. Abnorm. & Social Psychol.*, **56**: 143-159, 1958.
4. FINK, M. AND KAHN, R. L. Behavioral patterns in induced states of altered brain function. Paper read at Divisional Meeting, Am. Psychiat. Ass., New York, November, 1957.
5. FINK, M. AND KAHN, R. L. Relation of EEG delta activity to behavioral response in electroshock: quantitative serial studies. *AMA Arch. Neurol. & Psychiat.*, **78**: 516-525, 1957.
6. FINK, M., KAHN, R. L. AND KORIN, H. Effects of diffuse altered brain function on perception. *Internat. Congr. Psychol. Proc.*, **15**: 238-239, 1959.
7. FINK, M., KAHN, R. L. AND POLLACK, M. Psychological factors affecting individual differences in behavioral response to convulsive therapy. *J. Nerv. & Ment. Dis.*, **128**: 243-248, 1959.
8. GALLAGHER, E. B., LEVINSON, D. J. AND ERLICH, I. Some sociopsychological characteristics of patients and their relevance for psychiatric treatment. In *The Patient and the Mental Hospital*, Greenblatt, M., Levinson, D. J. and Williams, R. H., eds., pp. 357-379. Free Press, Glencoe, Ill., 1957.
9. JACKSON, D. N. AND MESSICK, S. J. Content and style in personality assessment. *Psychol. Bull.*, **55**: 243-252, 1958.
10. JACKSON, D. N., MESSICK, S. J. AND SOLLEY, C. M. How "rigid" is the authoritarian? *J. Abnorm. & Social Psychol.*, **54**: 137-140, 1957.
11. JAFFE, J., FINK, M. AND KAHN, R. L. Communication patterns with altered brain function. *J. Nerv. & Ment. Dis.*, **130**: 235-239, 1960.
12. KAHN, R. L. AND FINK, M. Changes in language during electroshock therapy. In *Psychopathology of Communication*, Hoch, P. and Zubin, J., eds., pp. 126-319. Grune & Stratton, New York, 1958.
13. KAHN, R. L. AND FINK, M. Personality factors in behavioral response to electroshock therapy. *J. Neuropsychiat.*, **1**: 45-49, 1959.
14. KAHN, R. L. AND FINK, M. Prognostic value of Rorschach criteria in clinical response to convulsive therapy. *J. Neuropsychiat.* In press.
15. KAHN, R. L., FINK, M. AND WEINSTEIN, E. A. Relation of amobarbital test to clinical im-

provement in electroshock. *A.M.A. Arch. Neurol. & Psychiat.*, **76**: 23-29, 1956.

16. KAHN, R. L., POLLACK, M. AND FINK, M. Figure-ground discrimination after induced altered brain function. *A.M.A. Arch. Neurol.* In press.

17. KAHN, R. L., POLLACK, M. AND FINK, M. Social

factors in the selection of therapy in a voluntary mental hospital. *J. Hillside Hosp.*, **6**: 216-228, 1957.

18. KAHN, R. L., POLLACK, M. AND FINK, M. Sociopsychological aspects of psychiatric treatment. *A.M.A. Arch. Gen. Psychiat.*, **1**: 565-574, 1959.

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Social Attitude and ECT

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It was our specific purpose to determine 1) what the F Scale measures in a psychiatric population, and 2) how response to the F Scale varies with change in brain function.

METHOD:

Population: These studies have been conducted at Hillside Hospital, a private, non-profit 200 bed psychiatric hospital in New York City admitting voluntary patients with "early and curable mental illness". Psychoanalytically-oriented psychotherapy is the treatment of choice for all patients, with somatic therapies (convulsive, insulin coma and drug therapies) regarded as ancillary, but available when needed. The in-patient population consists mainly of middle-class Jewish patients, with a high school education, between the ages of 18 and 40. Most patients are classified into the diagnostic categories of schizophrenia, psychoneurosis, manic-depressive and involutional psychosis.

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RESULTS:

What the F Scale Measures in our Population: The "Reverse" F Scale

In this study the entire in-patient population was first tested with the conventional scale, then retested one month later with a "reverse" scale (2). In the "reverse" scale the same items were used, but stated in opposite terms to the original. Thus the first example cited above was changed to read, "A sane, normal, decent person might have to hurt a close friend or relative." The "reverse" scale was scored in the same manner as the regular scale, with high scores reflecting greater agreement.

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Table I about here

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In a second study, 69 consecutive hospitalized patients referred for convulsive therapy were given the F Scale in the week prior to treatment, on the day following the 12th treatment, and two weeks after the termination of treatment. These patients were divided into two groups, an experimental group of 59, and a control group of ten patients randomly selected from the referrals. In the experimental group all patients received grand mal convulsive therapy, while the control group received subconvulsive electro-stimulation only. All patients were treated three times a week, for a minimum of 12 treatments.

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The changes in F score during convulsive treatment are shown in Table 2. There was a mean increase of +5.7 in F score during treatment, a difference significant at the 5% level of confidence. In contrast, the control group showed a statistically insignificant change during the same period.

The effect of convulsive therapy on the F score was further demonstrated by an analysis of seven patients, originally in the control group, who were subsequently placed on a regular course of convulsive therapy. On retest after 12 control treatments their scores were unchanged, with a mean difference from the pretreatment score of +0.1 errors. After 12 convulsive treatments, however, these patients showed a significant mean increase of +9.1 errors.

Table 2 about here

Adequate EEG records at the time of the 12th treatment were obtained for 54 patients. For this analysis the records were divided into two groups according to the degree of slow wave activity: a high delta index group in whom slow wave activity appeared in 40% or more of the selected leads, and a low delta index group in whom the slow wave activity was less than 40%. Changes in F scores during treatment for the two groups are shown in Table 3.

Table 3 about here

The patients with high degrees of slow wave activity had a mean increase in F score of +8.6, significant at the 5% level of confidence. Those patients with low delta indices showed

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* Significant at .05 level

TABLE 3

Change in F Score and Degree of Induced Cerebral Dysfunction

Degree of		Pre-	During	Mean	
<u>Slow Wave Activity</u>	<u>N</u>	<u>Treatment</u>	<u>Treatment</u>	<u>Difference</u>	<u>t</u>
High Delta Index	27	43.9	52.5	+8.6	2.3*
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a relatively small increase of +3.4. While the increase in scores in the low delta activity group was statistically insignificant, it was greater than that of the control group (Table 2).

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Table 4 about here

TABLE 4

Pretreatment and Posttreatment F Scores

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DISCUSSION:

These observations demonstrate the relevance of the F Scale to the convulsive therapy process. An understanding of these relationships requires examination of the psychological factors reflected by the F Scale in our population.

The observations on the reverse F Scale indicates that those patients who disagreed with the original statements (low F score) were responding to the content of the statements. This was shown by the high degree of agreement with the reverse statements. However, those patients who agreed with the original statements (high F score) continued to agree when the statements were reversed. Evidently, these patients were not responding to the content of the statements, but demonstrated a more generalized reaction.

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more marked than actually observed. Several patients of foreign-birth and little education had maximum or near maximum scores prior to treatment, thus eliminating or reducing the possibility of an increase on retesting.

The change in score with altered brain function is consistent with previous observations on the behavioral effects of convulsive therapy. In accord with our conceptual framework, greater agreement with F Scale items during treatment is related to increased stereotypy and difficulty in discrimination, as well as increased acquiescence. This is part of a general process which has been noted in linguistic, perceptual and clinical behavioral measures. In their language, convulsive therapy patients show increased denial, evasion, qualification and use of clichés and stereotyped expressions (16). They also manifest increased repetitiveness of words (11), difficulty in complex visual and tactile perception (6) and figure-ground discrimination (14). Clinically, they are characteristically more compliant and acquiescent and try to please the examiner (5).

SUMMARY:

A measure of social attitude, the California F Scale, has been utilized in studies of the convulsive therapy process. In a voluntary psychiatric hospital it was noted that patients referred for convulsive therapy had significantly higher F scores than those receiving psychotherapy only. Among the patients receiving convulsive therapy, those with the higher initial F scores were evaluated as showing the best clinical results. With treatment there was a significant increase in F score, with the increase related to the degree of altered brain function. Following treatment the scores returned to their original level.

Comparison of results with a conventional and "reverse" F scale demonstrated that low F score patients respond to the content of the questionnaire, while those with high F scores showed a generalized pattern of agreement independent of the content.

These results are interpreted in terms of the psychological processes measured by the F Scale. High F score patients are considered to be stereotyped in their thinking and to have difficulty in introspection -- behavior which is incompatible with psychoanalytically-oriented psychotherapy, rendering them more liable to referral for convulsive therapy. With treatment, such patients are also more likely to develop the language patterns of denial and use of clichés which are the cues for evaluations of clinical improvement. The increase in F score with treatment is comparable to the other types of behavioral

change, such as increased acquiescence, increased difficulty in figure-ground discrimination, and increased stereotypy of language.

References

1. Adorno, T.W., Frenkel-Brunswick, E., Levinson, D.J. and Sanford, R.N. The Authoritarian Personality. Harper, New York, 1950.
2. Bass, B. M. Authoritarianism or acquiescence? J. Abnorm. & Soc. Psychol., 51: 611-623, 1955.
3. Christie, R., Havel, J., and Seidenberg, B. Is the F Scale irreversible? J. Abnorm. Soc. Psychol., 56: 143-159, 1958.
4. Fink, M. and Kahn, R.L. Relation of EEG delta activity to behavioral response in electroshock: quantitative serial studies. A.M.A. Arch. Neurol. & Psychiat., 78: 516-525, 1957.
5. Fink, M. and Kahn, R.L. Behavioral patterns in induced states of altered brain function. Paper read at Divisional Meeting, Amer. Psychiat. Ass., New York, November, 1957.
6. Fink, M., Kahn, R.L. and Korin, H. Effects of diffuse altered brain function on perception. Proc. XV Int. Congr. Psychol. Amsterdam: North-Holland Publ., pp. 238-239, 1959.
7. Fink, M., Kahn, R.L. and Pollack, M. Psychological factors affecting individual differences in behavioral response to convulsive therapy. J. Nerv. & Ment. Dis., 128: 243-248, 1959.

References

8. Gallagher, E.B., Levinson, D.J. and Erlich, I. Some sociopsychological characteristics of patients and their relevance for psychiatric treatment. In M. Greenblatt, D.J. Levinson and R.H. Williams (Eds.) The Patient and the Mental Hospital. The Free Press, Glencoe, Ill. pp. 357-379, 1957.
9. Jackson, D.N., Merrick S.J., and Solley, C.M. How "rigid" is the authoritarian? J. Abnorm. Soc. Psychol. 54: 137-140, 1957.
10. Jackson, D.N. and Merrick, S.J. Content and style in personality assessment. Psychol. Bull., 55: 243-252, 1958.
11. Jaffe, J., Fink, M. and Kahn, R.L. Communication patterns with altered brain function. J. Nerv. & Ment. Dis., in press.
12. Kahn, R.L., Fink, M. and Weinstein, E.A. Relation of amobarbital test to clinical improvement in electroshock. A.M.A. Arch. Neurol. Psychiat., 76: 23-29, 1956.
13. Kahn, R.L. and Fink, M. Personality factors in behavioral response to electroshock therapy. J. Neuropsychiat., 1: 45-49, 1959.
14. Kahn, R.L., Pollack, M. and Fink, M. Figure-ground discrimination after induced altered brain function. A.M.A. Arch. Neurol., in press

15. Kahn, R.L. and Fink, M. Prognostic value of Rorschach criteria in clinical response to convulsive therapy. Paper read at Electroshock Research Ass., San Francisco, 1958.
16. Kahn, R.L. and Fink, M. Changes in language during electroshock therapy. In P. Hoch and J. Zubin (Eds.), Psychopathology of Communication. Grune and Stratton, New York. pp. 126-139. 1958.
17. Kahn, R.L., Pollack, M. and Fink, M. Social factors in the selection of therapy in a voluntary mental hospital. J. Hillside Hosp. 6: 216-228, 1957.
18. Kahn, R.L., Pollack, M. and Fink, M. Sociopsychological aspects of psychiatric treatment. Arch. Gen. Psychiat., in press.

Social Attitude Questionnaire (F Scale)*

Fellow are a number of statements. For each statement we want you to give us your personal opinion of whether you agree or disagree. Answer each statement according to one of the following:

I AGREE A LITTLE

I DISAGREE A LITTLE

I AGREE PRETTY MUCH

I DISAGREE PRETTY MUCH

I AGREE VERY MUCH

I DISAGREE VERY MUCH

1. No sane, normal, decent person could ever think of hurting a close friend or relation.

2. Science has its place, but there are many important things that must always be beyond human understanding.

3. If people would talk less and work more, everybody would be better off.

4. When a person has a problem or worry, it is best for him not to think about it, but to keep busy with more cheerful things.

5. What the youth needs most is strict discipline, rugged determination, and the will to work and fight for family and country.

6. Nowadays when so many different kinds of people mix together so much, a person has to protect himself especially carefully against catching an infection or disease from them.

7. Sex crimes, such as rape and attack on children, deserve more than mere imprisonment; such criminals ought to be publically whipped, or worse.

8. The best teacher or boss is the one who tells us exactly what is to be done and how to go about it.

9. Young people sometimes get rebellious ideas, but as they grow up they ought to get over them and settle down.

10. People can be divided into two distinct classes: the weak and the strong.

* From Gallagher, Levinson and Erlich (1957).

Scoring: Agreement is scored as +7 (agree very much), +6 (agree pretty much), and +5 (agree a little); +4 for no response or uncertain; +3 (disagree a little), +2 (disagree pretty much), and +1 (disagree very much). The ten items are summed for a single F-Scale Score.

Social Attitude Questionnaire (F Scale)

Below are a number of statements. For each statement we want you to give us your personal opinion of whether you agree or disagree, and how much.

No sane, normal decent person could ever think of hurting a close friend or relation.....

Science has its place, but there are many important things that must always be beyond human understanding.....

If people would talk less and work more, everybody would be better off.....

When a person has a problem or worry, it is best for him not to think about it, but to keep busy with more cheerful things....

What the youth needs most is strict discipline, rugged determination, and the will to work and fight for family and country...

Nowadays when so many different kinds of people mix together so much, a person has to protect himself especially carefully against catching an infection or disease from them.....

Sex crimes, such as rape and attack on children, deserve more than mere imprisonment; such criminals ought to be publicly whipped, or worse.....

The best teacher or boss is the one who tells us exactly what is to be done and how to go about it.....

Young people sometimes get rebellious ideas, but as they grow up they ought to get over them and settle down.....

People can be divided into two distinct classes: the weak and the strong.....

I agree very much	pretty much	a little	I disagree a little	pretty much	very much	I can't say