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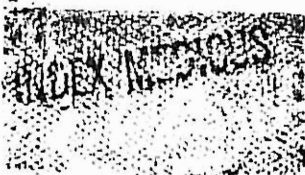
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Personality Factors in Behavioral Response to Electroshock Therapy

ROBERT L. KAHN, PH.D., and MAX FINK, M.D.

In previous studies^{1,2} we found that patients who were most likely to improve from electroshock treatment exhibited persistent and relatively marked degrees of altered brain function, as measured by the electroencephalogram and the amobarbital test for brain disease.³ We reported, furthermore,⁴ that patients who improved with electroshock treatment had developed a language pattern similar to that previously described by Weinstein and Kahn⁵ in their studies of neurological patients with cerebral dysfunction. Weinstein and Kahn described a language pattern which they called "language of denial" and demonstrated the relationship of this language pattern to the premorbid personality of the patient.

On the basis of these observations, we assumed that the patients most likely to benefit from electroshock treatment would be those who most closely approximated the "explicit verbal denial" personality.⁶

To test this hypothesis, we studied 63 consecutive patients referred for electroshock therapy. The selection of patients for treatment was made by the psychiatric staff, independent of the judgment of the authors. The patients ranged in age from 20 to 66, with a mean of 47, and included 21 men and 42 women. Prior to and during treatment each patient was evaluated according to the following methods:

1. *Structured Family Interviews:* Personality was evaluated in interviews with members of the patient's family. At the opening of the interview the relative was asked to describe, in his own words, the patient's usual interests and attitudes. The relatives were encouraged to talk about any aspect they wished, and the interviewer followed the trend of their talk, rather than proceed-

ing in a serial fashion. The interviewer asked questions, however, to obtain information in 15 specific areas which have been described as characteristic of the "explicit verbal denial" personality. The number and type of questions required with each relative varied according to the degree of spontaneous production and the informant's capacity to comprehend and communicate. The informant was encouraged to give concrete examples of all statements.

The patients were evaluated as to the presence and extent of the following characteristics: whether they (1) stressed verbal symbols such as resolutions, homilies, clichés and rationalization; (2) were prestige and security conscious, and did not enjoy the intrinsic benefits of health, work, leisure, money and property; (3) regarded illness as an imperfection or disgrace, keeping it a secret from family and neighbors, and were reluctant to seek medical care; (4) tended to "shake off" their own troubles and to be regarded as practical persons who advise others; (5) possessed much drive and compulsive energy and felt guilty or uneasy if not occupied; (6) were conscientious, with a high sense of duty and responsibility; (7) were sensitive to criticism, regarding it as an attack on their integrity; (8) were proud and tended to avoid help from others; (9) were reserved rather than openly affectionate or emotional; (10) emphasized being correct; (11) lacked imaginativeness and creativity; (12) were not considered by their relatives as dependent; (13) did not discuss sex openly; (14) did not have temper outbursts; and (15) were not "ludic"—a term taken from Piaget⁷ and used by Weinstein and Kahn⁸ to denote comic, tragic or melodramatic behavior.

After the interview, each item was rated on a scale of 0, 1 or 2. A score of 0 was given if the aspect was noted to a minimal degree; a score of 1 indicated that the characteristic was moderately present; while a score of 2 indicated the definite and marked

From the Department of Experimental Psychiatry, Hillside Hospital, Glen Oaks, New York.

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The use of Pentothal, convulsive stimulation, tetrazol or Megimide, antagonism does not stimulation of the central these analeptics. He chemical stimulation, physiologic circulatory, which are responsible, ages in the patient.³ of patients reported, dly small, certain con- from our observations, minimize or ignore the tions of the illnesses. was centered on only nd pharmacologic in- ons involved.

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presence of the pattern. The scores for each item were added and the resultant score termed the "denial personality score."

2. *Clinical Evaluation:* Each patient was interviewed prior to treatment and at weekly intervals during and following the course of treatment. The clinical evaluation was determined by the patient's behavior in the few weeks following the end of the course of treatment, and was based on the evaluation of the patient's therapist, the therapist's supervising psychiatrist and the supervising psychiatrist in charge of the electroshock treatment unit. Patients were classed into three groups: much improved, moderately improved, or unimproved, following the criteria outlined previously.⁶

3. *Language Study:* In addition to the clinical interviews, each patient was examined with a standardized series of questions directed at determining his attitude toward his illness. Two of the questions asked were "What is your main trouble?" and "If you had one wish, what would you wish for?" The patients were tested before and during treatment, and the verbatim responses were analyzed for changes in language, according to the method previously described.⁷

Treatment for all patients consisted of grand mal electroshock, using a Reiter electrostimulator or a Medcraft alternating-current instrument, on a schedule of three treatments per week.

Of the 63 patients, we were able to interview the relatives of 47; and the present study refers to this group. The denial personality scores ranged from 0 to 25, with a median of 11. For statistical comparison the patients were divided into two groups. Patients with scores ranging from 11 to 25 were considered the "high denial" group, while those with scores from 0 to 10 were classed as low in denial tendencies.

Personality Score and Clinical Response: Patients with high denial personality scores in these family interviews were most likely to be rated as much improved, and only one case was considered unimproved (Table I). In patients with low scores, however, the clinical response rating occurred on a chance basis, with 30% of the patients being regarded as unimproved.

TABLE I
Relation of Denial Personality Scores to Clinical Response to Electroshock

Denial Personality Score	Much Improved	Moderately Improved	Unimproved	Total
11 - 25	14	9	1	24
0 - 25	7	9	7	23
Total	21	18	8	47

The difference in the denial scores between the much and moderately improved patients when compared to the unimproved patients is statistically significant (at 1% level of confidence by Mann-Whitney U Test). Although the much improved patients have a higher mean score than the moderately improved group, this difference is not significant.

Qualitative Observations: Although there is a relationship between high personality scores and the clinical rating, 30 per cent of the patients with low denial scores were also evaluated as showing a marked improvement. While the group of seven patients is a small one, certain common characteristics can be described. Although these subjects lack the competitive drive, prestige and security needs of the high denial subjects, they show a similar lack of creative or imaginative capacity or ability to think critically of their own or others' feelings. They relate to the environment primarily by nonverbal forms of communication. They are described by their families as laughing or crying excessively and as showing anger by muteness—"going into a shell," "walking out of the room in a huff"—or by violent tempers with table-pounding, throwing objects or direct physical assault.

Personality Score and Changes in Language: By means of the technique of language analysis described in a previous study,⁷ the changes in language in clinical interviews were compared with the denial personality scores. Nine patterns of language change, such as explicit denial of illness or symptoms, displacement, qualification, etc., have been described as characteristically occurring after electroshock. As in the previous study, each patient was classified according to the dichotomy of whether

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ality Scores to Electroshock

Unimproved	Total
1	24
7	23
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8	47

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Although there high personality ; 30 per cent of scores were also d improvement. ients is a small eristics can be bjects lack the and security ects, they show maginative catically of their y relate to the nverbal forms e described by crying exces- by muteness— g out of the : tempers with ects or direct

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or not he showed three or more explicit lan- guage changes. Patients with high denial personality scores showed a greater number of language changes than those with low denial personality scores (Table II). The coefficient of correlation between the per- sonality scores and the number of language changes is +.71, significant at better than the 1% level of confidence.

TABLE II

Relation of Denial Personality Scores to Clinical Language Changes During Treat- ment

Denial Personality Scores	No. Language Changes	
	0 - 2	3 or more
11 - 25 (20)	8	12
0 - 10 (20)	17	3
Total	25	15

Illustrative Cases

Case 1. High Denial Personality Score: A 61-year-old housewife was admitted to the hospital with a 15-month history of insomnia, abdominal pain and fear of cancer. On admission she was depressed, retarded and seclusive, evincing little interest in her surroundings and wandering aimlessly about the ward.

The patient was described by her husband as a conscientious, dependable, responsible person with much integrity. She had no hobbies or outside interests, and was unable to relax; as a consequence, she busied herself with chores at home. She was "mortally afraid" of doctors, minimized her ill- nesses and concealed ailments even from her hus- band. Very restrained, she showed no affection or emotion, never discussed sex and rarely lost her temper. She had "a long memory for little things if she felt that she was wronged," a "streak of stub- bornness," and would "just as soon hold another person responsible for her mistakes." She was proud and would "rather go without food" than borrow or take money from others.

According to the denial criteria, her score was 20.

After 20 electroshock treatments, she became eu- phoric, took an interest in her personal appear- ance and participated in hospital activities. Her doc- tor called her a "model" patient who, "while re- luctant to discuss her personal feelings, asserted that she had no difficulties at home, had a won- derful husband who was very good to her, consid- ered herself lucky and eagerly anticipated her dis- charge." She was discharged with a rating of "much improved."

Case 2. Low Denial Personality Score: A 41- year-old housewife was admitted to the hospital with a two-year history of depression following the birth of her fourth child. She cried frequently, lost interest in social activities, found it increasingly difficult to take care of her baby and had suicidal

thoughts. On admission it was noted that the pa- tient paid little attention to her personal appear- ance, cried readily, showed psychomotor retarda- tion and was circumstantial in speech.

The patient was described by her husband as a "negative personality" with whom it was not easy to get along because she was opinionated and ar- gumentative. He regarded her as "completely im- practical, with no common sense." She was a poor housekeeper, constantly demanding help from other people, although not the kind of person who would put herself out for others. An excessively talkative person, she liked to engage in long, intellectual, pre- tentious conversations. When angry, however, she would become either completely mute or "very nasty, implying you just don't know any better." Although considered a "cold" person, she was able to talk freely about sex. She frequently com- plained of physical ailments and went to physicians readily. She was "naive" and "unrealistic," believ- ing, for example, that she had a flair for writing although others considered her amateurish.

Her personality score was rated as 4.

The patient received 18 electroshock treatments, which were terminated at her own insistence be- cause she was too frightened to take any more. At the time of her discharge her doctor noted her as "quite depressed," but felt it was doubtful that she could benefit from further treatment at the hospital. She was discharged with the recommendation for continued psychotherapy.

Discussion

The structured family interview was de- signed to test the specific hypothesis de- rived from earlier observations that patients with the "explicit verbal denial" personality are most likely, with electroshock therapy, to show both the language and behavioral changes which are rated as much improved by the examiner. The data support this hy- pothesis and are also consistent with the theory of the mode of action of electroshock therapy advanced by Weinstein, Linn and Kahn in 1952." They suggest that ". . . the therapeutic efficacy of electroconvulsive ther- apy . . . derives from the production of a state of brain function in which the mech- anism of denial is facilitated in charactero- logically disposed individuals."

The degree of explicit verbal denial is, however, only one personality aspect affect- ing the behavioral response to treatment. On the basis of the present data and methods of analysis, a broader view of personality pat- terns in relation to improvement with EST is now possible. Those patients who are rated as clinically improved are character-

ized as: (a) nonempathic—unable to think critically or sensitively about the needs, feelings or communications of others; (b) non-introspective—unable to think critically about their own feelings or needs, or to achieve insight even with the collaboration of others in the psychotherapeutic relationship; (c) relying heavily on nonverbal communication—even when they are talkative there is little referential communication, the words being clichéd, stereotyped or representative of feelings and emotions rather than transmitters of information; and (d) highly conventional—without imaginative or creative capacity, and with few resources to deal with stressful or new situations.

With this pattern as the common background, two classes of patients who respond to treatment can be defined: the driving, conscientious, independent, successful, emotionally controlled person who can be characterized as the "explicit verbal denial" personality type; and the chronically inadequate, affectively labile and ludic, dependent person, coming from an impoverished sociocultural background. While both types are rated as improved in their short-term response to electroshock, preliminary follow-up observations indicate that the "explicit verbal denial" personality type is more likely to sustain the clinical response, while the ludic group is likely to relapse quickly.

Consistent with our previous studies we have found that altered brain function is a necessary condition for behavioral change with electroshock therapy. The kinds of behavioral change shown with altered brain function, however, vary markedly in different patients. Some show mood changes and denial or displacement of symptoms, and are rated as improved. Others develop paranoid agitated states, become withdrawn or show additional somatic or memory complaints, and are rated as unimproved. In this study we have stressed the personality factors in those cases whose behavioral response was rated as improved. We have not considered the patients who were rated as only moderately improved or unimproved. If the basic hypothesis is correct, we should also find a relationship between personality and the behavioral response in patients who are rated as unimproved. Present information

in this regard is minimal, as this problem has not been approached with a specific hypothesis.

These observations raise questions concerning the relation of personality to type of mental illness and choice of therapy. Clinical observations support the concept of a characteristic premorbid personality. Abraham¹ noted that states of depression occur in obsessional persons. Arnot² described depressed patients as being overconscientious and perfectionistic. Hamilton and Mann,³ reporting various aspects of the personality in involuntal depression, included such features as "followed a rigid pattern of behavior . . . displayed a lack of imagination . . . narrow range of interest . . . thorough, conscientious, meticulous devotion to duty . . . lack of feeling for point of view of others . . . hard, uncompromising drivers . . . over-sensitive . . . reserved." Cohen *et al.*,⁴ in an intensive study of manic-depressive psychosis, reported their patients as being highly prestige conscious; little concerned with problems of interpersonal relatedness; stereotyped; conventional; having little capacity for communicative interchange; and unaware of other persons' feelings toward them or of their feelings toward others. They emphasized the patients' inability to communicate verbally and suggested that the therapeutic relationship should be in nonverbal terms rather than emphasizing the intellectual content of the exchange.

These studies of the personality background of depression show a pattern that is most similar to those personality aspects which have been described as the "explicit verbal denial" personality. The factor of personality could thus explain the fact that depression is the condition that responds best to electroshock treatment. The same personality factors which make a person susceptible to a depressive reaction are those which make him responsive to nonverbal forms of therapy. These factors enable him to respond under the conditions of altered brain function, with those language and other behavioral changes which are evaluated as improved. Thus, the same stereotypy, conventionality, perfectionism and prestige consciousness which produce a cat-

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Summary and Conclusions

To summarize, we believe that our results show that aspects of personality can be differentiated, which are significantly related to the response to treatment. The basic personality pattern of the patients who respond best to electroshock treatment can be characterized as (a) nonempathic, (b) nonintrospective, (c) communicating nonverbally and (d) highly conventional and stereotyped, with little imaginative or creative capacity. Within the context of this common core, there are two main subdivisions of improved patients. One group is comparable with the "explicit verbal denial" personality, showing such features as drive, conscientiousness, independence and emotional control. The other group consists of persons apt to be chronically inadequate and dependent, coming from deprived sociocultural backgrounds, who are affectively labile and ludic. The same personality factors which contribute to a depressive reaction contribute to a behavioral change, under the conditions of altered brain function following electroshock therapy, which is evaluated as improvement.

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