

Relationship of Attitude to Behavior:

Preliminary Results and Implications

for Treatment Evaluation Studies¹

ARNOLD M. LUDWIG, M.D.²

One of the most intriguing but relatively neglected problems in evaluation of psychotherapy pertains to the relationship between attitude and behavior. This problem seems especially relevant for studies designed to evaluate the therapeutic effectiveness of techniques employing LSD where profound and dramatic attitude changes purportedly occur following a single therapy session. When patients report marked reduction in emotional distress, greater empathy toward others, a new sense of hope or rejuvenation, greater insight concerning themselves and their role in life, and increased coping ability following psychedelic-type therapies, it is tempting to suppose that these patients have received great therapeutic benefit. However, even if we assume these professed attitude changes to remain stable over time, the question remains concerning the impact of this change on behavior. If we limit our discussion to alcoholic patients, we may naively wonder whether constructive attitude change following psychedelic-type (or psychiatric) therapies simply produces a more insightful drunk or a sober and more productive person.

At the outset, it is important to make a distinction between "objective" and

"subjective" attitudes. Objective attitudes pertain to a person's verbalized or written sentiments or feelings (concerning specific types of behavior) which have the opportunity of manifesting themselves in action or behavior. In other words, these attitudes have specific behavioral correlates. For example, a person desiring employment (e.g., objective attitude) has the opportunity of seeking or attaining employment (e.g., objective behavior).

Although there have been relatively few studies on the actual relationship between objective type attitudes and behavior in psychotherapy, there has been even less research on the relationship of subjective attitudes to behavior. By subjective attitudes, I refer to a person's verbalized or written sentiments or feelings (concerning specific types of experiential or phenomenological states) which have no direct or specific behavioral correlates. It is attitudes such as these which are often of primary concern both to patient and therapist and which, interestingly enough, constitute the major outcome criteria measures for most studies on the effectiveness of psychotherapy. Generally, it is assumed by therapists that such attitudes determine the actual behavior of patients: the more constructive the attitudes, the better the behavior; the less constructive the attitudes, the worse the behavior. Unfortunately, there has been little objective data to support this common-sense assumption.

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²Director of Education and Research, Mendota State Hospital, Madison, Wisconsin.

Concerning this issue, I should like to present some initial data gathered from an ongoing research program in which various combinations of LSD, hypnosis, and psychotherapy are employed in the treatment of alcoholics. It is not my intention to compare the efficacy of the various treatments used in our study or to review adequately the literature bearing on attitude and behavior. Instead I propose to limit the scope of this paper to the presentation and discussion of some selected data pertaining to the relationship of certain important parameters of subjective attitude to certain important parameters of behavior. Since the data are still incomplete, I must regard the results as tentative and my remarks as provisional. However, even though tentative, these preliminary results and their implications seem interesting enough to warrant comment and speculation.

EVALUATION INSTRUMENTS

Attitude Measures

Although we are employing several different self-evaluative questionnaires to assess attitude and personality characteristics, current analyses will concern only the Psychiatric Evaluation Profile (PEP).³ This instrument is a self-administered questionnaire-type inventory constructed for use in nonorganic, nonpsychotic, psychiatric patients. The PEP was specially designed to evaluate attitude change following LSD-type therapies. Prior factor analysis of data gathered from earlier versions of the PEP (Ludwig & Levine, 1965b) has produced six factors which comprise the current form. The six factors are as follows: (a) Distress, (b) Distrust, (c) Social Desirability, (d) Future, (e) In-

sight-Coping, and (f) Great Cause (sample items appear in Appendix A). Not only does this instrument seem very sensitive to changes in attitude, but the content of several of the scales seems highly suited to tap the rather unusual attitude changes (e.g., sense of rebirth, renaissance, profound insight, etc.) associated with psychedelic-type therapies (Levine & Ludwig, 1967; Ludwig & Levine, 1966).

Behavior Measures

One of the major problems in evaluating complex behavior, especially in many psychoneurotic and character disorders, is that few investigators can agree on appropriate objective and specific criteria to measure "improvement." The alcoholic patient, however, seems ideally suited to investigations on the effectiveness of various psychiatric therapies since there is at least one generally acceptable objective criterion which can be employed to measure improvement—namely, abstinence.

In an effort to obtain an objective and quantitative measure of whether patients have been imbibing at the time of follow-up evaluation, we are employing the Breathalyzer (Borkenstein & Smith, 1961; Stephensen Corporation, 1963), which is a highly reliable and sensitive instrument for determining blood alcohol level from a sample of expired air. To my knowledge, this is the first time such an instrument has been used as an adjunct in evaluating the effectiveness of therapy for alcoholics. Although the instrument cannot be used to evaluate drinking behavior during the interim between follow-ups, it produces virtually incontrovertible evidence for sobriety or inebriation at the time breath samples are obtained, thereby removing the necessity for subjective judgments about whether the patient might be intoxicated at the time of evaluation. Rather than present our initial data on the Breathalyzer, suffice it to say that although its use provides us with a great deal of methodo-

³More detailed information on the PEP may be obtained by writing to Jerome Levine, M.D., Chief, Psychopharmacology Service Branch, National Institute of Mental Health, Bethesda, Maryland.

logical satisfaction, we have only encountered one patient whose verbal account of his drinking behavior varied from the instrument reading.⁴

The evaluation of behavior, even in an alcoholic, must involve much more than the imbibing of intoxicating beverages. To this end, we have devised a Behavior Rating Scale (BRS)⁵ designed to evaluate more general areas of behavior. Ratings for the BRS are performed by our follow-up social workers following a 30-40 minute structured interview with the patient or an informant (relative) and are based on reported rather than observed behavior (see Appendix II for BRS Interview and Rating forms). The BRS has proven to be a highly reliable and simple instrument to employ.

For information purposes, the scales composing the BRS and interrater reliability coefficients are presented in Table 1. Scale intercorrelations appear in Table 2.⁶

Evaluation Periods

All patients are evaluated approximately 1 week before therapy, 2 weeks posttherapy, and at 3, 6, 9, and 12 months after hospital discharge. Relatives are seen at the pretherapy and 6 and 12 month postdischarge periods at which

⁴The patient denied drinking although he was obviously intoxicated and recorded a blood alcohol level of 150 mg.%.

⁵In devising this scale, we have leaned heavily on the excellent work of Nurse (1964). Although the general format of the BRS is similar to his behavior rating scale, we were forced to alter the content of the rating categories and devise a highly specific structured interview in order to increase interrater reliability and to make the rating categories of each subscale more appropriate to types of behavior which we hoped to evaluate. Much credit is to be given to Louis Stark, Gretchen Petersen, and Bonnie Nelson for the important contributions in helping to develop the present form of the BRS.

⁶More detailed information concerning the BRS and its administration may be obtained by writing the author.

TABLE 1
Interrater Reliability for BRS

I.	Home Interpersonal Relationships	.96
II.	Social Interpersonal Relationships	.66
III.	Personal Social Responsibilities	.69
IV.	Employment	.87
V.	Drinking Pattern	.91
VI.	Legal Adjustment	.97
TA	Total Adjustment (summed score)	.88

Note.—Key: $p=.01$ for $\rho=.66$, $N=15$.

times they complete several questionnaires and answer structured questions (R form of BRS) concerning the patient. All patients spend approximately 1 month in the Alcoholic Treatment Center. Because we are only in the early phase of follow-up evaluation, I shall confine the data analysis to partial information obtained up through the 3 month postdischarge evaluations.

PRELIMINARY RESULTS⁷

Patient-Relative Intercorrelations on the BRS

Product-moment correlations were performed at the pretherapy base-line period between ratings on the relatives' assessment of the patients' prehospital (1 year) admission behavior and patients' own assessment of their behavior. Means and standard deviations for each of the

⁷Scattergram analysis indicated that the correlated data satisfied the statistical assumptions for a product-moment analysis.

TABLE 2
BRS Subscale Intercorrelations

I	II	III	IV	V	VI	TA
I	.34	.61	.30	.07	.14	.62
II		.32	.05	.11	.13	.44
III			.59	.34	.15	.77
IV				.22	.31	.72
V					.26	.47
VI						.64

Note.— $r=.298$ for $p<.05$; $r=.393$ for $p<.01$ ($N=46$).

TABLE 3
Patient and Relative Data on BRS

	<i>X</i> (P)	<i>SD</i> (P)	<i>X</i> (R)	<i>SD</i> (R)	<i>r</i>
I	2.050	.649	1.779	.691	.630**
II	1.898	.355	1.779	.554	.593*
III	2.135	.724	1.813	.399	.502**
IV	2.033	.938	1.830	.847	.669*
V	1.677	.502	1.542	.498	.359*
VI	2.491	1.155	2.491	1.170	.724
TA	12.288	2.952	11.186	1.523	.743**

Note.—Key: *X*(P), *X*(R), *SD*(P), *SD*(R)=mean rating and standard deviation for patient and relative information BRS; *r*=product-moment correlation coefficient between patient and relative (all values significant below .01 level of probability for *N*=59); *p*=level of significance by sign test between ratings of patient and relative information.

**p*=.20.

***p*=.01.

BRS subscales were obtained. In order to determine whether there were any consistent trends in the relative's or patient's assessment of the patient's behavior, a sign test was employed. All these results are reported in Table 3.

As the results indicate, all patient-relative intercorrelations on the BRS subscales and Total Adjustment score show significant correlations beyond the .01 level of probability. However, it is also apparent that relatives tend to rate patients significantly worse than patients rate themselves on Subscales I, III, and Total Adjustment Scores. There also appears to be a similar trend toward significance in Subscales II, IV, and V.

PEP-BRS Intercorrelations at Base-line and 3-Month Postdischarge Periods

In order to determine (a) the relationship between the patient's report of prehospital admission behavior (over 1-year period) and his pretreatment attitudes (while in the hospital), and (b) his report of postdischarge behavior and postdischarge attitudes, product-moment correlations between the PEP and BRS at each of these intervals were performed (see Tables 4 and 5).

Focusing only on the Total Adjustment (TA) score of the BRS, which is highly correlated with all subscale scores (see Table 2), we find significant but low-order correlations with four PEP

TABLE 4
Attitude-Behavior Intercorrelations (Base Line)

PEP	BRS						
	I	II	III	IV	V	VI	TA
A	-.215	-.277*	-.124	-.196	-.020	-.130	-.267
B	-.143	-.312*	-.153	-.171	-.220	-.185	-.295*
C	.235	.211	.126	.330*	.201	.245	.301*
D	-.277*	.326*	.282*	.254	.113	.098	.324*
E	.454**	.252	.251	.152	.114	.249	.376**
F	.013	.086	-.069	-.129	.147	-.058	-.034

Note.—*N*=52.

**p*<.05.

***p*<.01.

TABLE 5
Attitude-Behavior Intercorrelations (3-months postdischarge) Follow-up

PEP	BRS						TA
	I	II	III	IV	V	VI	
A	-.40*	-.62**	-.54**	-.09	-.52**	.03	-.49*
B	-.16	-.35	-.14	-.20	-.19	-.01	-.25
C	.32	.41*	.25	.26	.29	-.14	.32
D	.54**	.58**	.52**	.22	.48*	.09	.56**
E	.52**	.59**	.56**	.30	.59**	.16	.63**
F	.20	.25	.03	.21	.38	-.15	.22

Note.—Key: $r=.384$ for $p<.05$; $r=.505$ for $p<.01$ ($N=29$).

* $p<.05$.

** $p<.01$.

TABLE 6
Change in PEP Correlated with Change in BRS over Same Time Interval
(3-month postdischarge minus base line)

PEP	BRS						TA
	I	II	III	IV	V	VI	
A	-.22	-.65**	-.42*	-.33	-.44*	-.45*	-.56**
B	-.23	-.38	-.22	-.24	-.41*	-.39*	-.42*
C	.22	.26	.11	.17	.46*	.29	.34
D	.20	.60	.38	.14	.29	.34	.42*
E	.51**	.49*	.54**	.40*	.36	.49*	.61**
F	-.23	.23	-.00	-.11	.05	.08	-.00

Note.—Key: $r=.384$ for $p<.05$; $r=.505$ for $p<.01$ ($N=29$).

* $p<.05$.

** $p<.01$.

scales (Distrust, Insight, Future, Social Desirability) at the base-line evaluation period, the number and order of significant correlations are in the predicted direction and range from .30 to .38. At the 3-month postdischarge period, the number and order of significant correlations is much higher. The BRS Total Adjustment score correlates

TABLE 7
Change in PEP
(2 weeks posttreatment minus base line) Correlated with Change in BRS
(3 months postdischarge minus base line)

PEP	BRS						TA
	I	II	III	IV	V	VI	
A	-.05	-.29	-.15	-.17	-.17	-.10	-.22
B	-.23	-.20	-.15	-.23	-.14	-.12	-.25
C	.14	.27	-.00	.05	.12	-.03	.12
D	.04	.29	.21	.08	.12	.20	.22
E	.26	.23	.24	.16	.05	.29	.30*
F	-.25	.05	.04	.06	.03	-.06	-.03

Note.—Key: $r=.298$ for $p<.05$ ($N=46$).

* $p<.05$.

TABLE 8
Base-line PEP Correlated with Change in BRS
(3-month postdischarge minus base line)

PEP	BRS						TA
	I	II	III	IV	V	VI	
A	-.12	-.27	-.11	-.18	-.06	-.26	-.25
B	-.22	-.09	-.12	-.14	-.19	-.14	-.22
C	.05	.05	-.01	.13	.08	.21	.14
D	-.04	.16	.09	-.05	-.15	.18	.05
E	.27	.17	.21	.09	-.00	.37	.27
F	-.15	.05	-.04	-.22	-.09	.16	-.06

Note.—Key: $r=.298$ for $p<.05$ for $N=46$.

significantly with three PEP scales (Distress, Insight, Future), the order of correlation ranging from .49 to .63.

In addition to these analyses, change scores on the PEP and BRS between these two time intervals were also intercorrelated (see Table 6). The results of this analysis revealed a pattern of significant correlations comparable to the 3-month postdischarge intercorrelations (Table 5).

Correlations between the PEP and BRS at Different Time Intervals

In order to assess the ability of scores attained on one evaluating instrument to predict scores on the other at different time intervals, several correlation analyses were performed. Change in PEP scores (2-week posttherapy minus base line) were correlated with change in BRS scores (3-month postdischarge minus base line) to evaluate whether the change in

attitude observed following therapy bore any relationship to the change in behavior observed following hospital discharge (see Table 7). Initial scores on the PEP and BRS were also correlated with change scores on the BRS (3-month postdischarge minus base line) and the PEP (2-week posttherapy minus base line), respectively (see Tables 8 and 9).

The results of all these analyses are comparable. Although there were several low-order significant correlations found (it is possible that these correlations are meaningful), their number was far below the number of significant correlations which might be expected to occur on the basis of chance.

Selected Pre- and Posttreatment Correlations

Base-line BRS with 3-month postdischarge BRS. Correlation of the Total Adjustment score between these two

TABLE 9
Base-line BRS Correlated with Change in PEP
(2 weeks posttherapy minus base line)

PEP	BRS						TA
	I	II	III	IV	V	VI	
A	-.18	-.19	-.06	-.12	.01	.06	-.10
B	-.24	-.19	-.09	-.07	.02	-.04	-.15
C	.18	.23	-.08	-.09	-.30*	-.04	-.03
D	.19	.41	.12	.21	.17	-.01	.25
E	.37*	.20	.18	.19	.06	.07	.27
F	.06	.05	.22	.08	.14	-.15	.07

* $p<.05$ for $N=46$.

TABLE 10
Attitude-Attitude Correlations

Scale	PEP 1-2 (N=52)	PEP 1-3 (N=29)
A	.50**	.20
B	.78**	.34
C	.61**	.42*
D	.51**	.34
E	.54**	.14
F	.69**	.64**

* $p < .05$.

** $p < .01$.

time intervals was not statistically significant ($r = .25$, $N = 46$). A similar analysis performed for Drinking Pattern scores revealed an even lower correlation ($r = .09$, $N = 46$).

Base-line PEP with posttreatment PEP scores. Product-moment correlations for PEP scales between base-line and 2-weeks posttherapy (PEP 1-2) and 3-months postdischarge (PEP 1-3) are listed in Table 10.

As the analyses indicate, the PEP 1-2 scale correlations are highly significant. However, except for the Great Cause and Social Desirability scales, the magnitude of the correlations decreases considerably between the base-line and 3-month post-discharge evaluations (PEP 1-3).

DISCUSSION

Although many insight-oriented psychotherapists regard constructive attitude change toward self, family, and society as a prerequisite for constructive behavioral change, there are numerous investigators who consider the analysis of patient attitudes as a criterion measure for therapeutic success as fruitless and superfluous. Not only are attitudes regarded as too nebulous and intangible phenomena for scientific investigation, but they are assumed to lack any real import unless they are reflected in behavior. This bias is reflected in both lay

and professional circles by such statements as "put up or shut up," "talk is cheap, it takes money to buy whiskey," "actions speak louder than words," and so on. This skeptical view toward attitudes seems especially appropriate in the case of the alcoholic patient who is noted for his many promises to self, family, and friends to stop drinking but whose behavior contradicts his words.

Perhaps much of the dissatisfaction with employing attitude evaluation as a major criterion of the effectiveness of psychotherapy stems from countless problems encountered in the measurement and conceptualization of attitudes (Green, 1954). Without attempting to enumerate these problems, I should like to focus briefly on one of the most crucial problems which seems to have great relevance to the practice and evaluation of psychotherapy—namely, the question of validation of attitudes.

Confining our initial remarks to objective attitudes, it would be tempting to assume that a person's "real" attitudes or convictions will be reflected in behavior. Although this assumption is the basis for many "validation" studies of self-administered attitude and personality inventories, there are certain conceptual difficulties to such an assumption.

First, appropriate behavior validates an objective attitude only if real attitudes are tautologically defined as being validated by behavior. This arbitrary assumption, however, has little basis for confirmation either through introspective experience or an understanding of patients. The alcoholic patient, for example, can crave the soporific effects of alcohol but still remain sober. On the other hand, most clinicians have encountered patients who sincerely desire to stop drinking, who take oaths that they will never "touch another drop," but who cannot control their drinking.

To illustrate the problem of employing behavior as a validation for attitude, I

might cite the case of a patient who truly wishes his father and employer dead but whose outward behavior to both is considerate and docile. It would be somewhat foolhardy to presume that his real attitudes, based on behavior, were those of love and respect or, conversely, that he would have to murder both to prove that he really hated them. Naturally, these examples are grossly oversimplified. Attitudes and factors other than those mentioned may contribute to the final determination of behavior. Nevertheless, it is quite apparent that the common dissociation between a given attitude or set of attitudes and behavior cannot be dismissed by regarding these attitudes as less real or true than those which seem manifested in behavior.

Second, even if certain attitude changes appear related to certain behavioral changes, it would be invalid to assume a causal relationship between attitude and behavior. This is because the set of assumptions or "facts" which must be employed to establish the existence of certain attitudes are unrelated to the set of assumptions employed to establish the existence of certain behavior.

Aside from these conceptual problems, there are always serious methodological problems involved in the accurate assessment of attitude. Questions of the depth of conviction or emotional involvement in the professed attitude, the influence of social desirability, the instability of attitudes and their modification over time and in different contexts, and their defensive functions all remain to be resolved in any study of "true" attitude.

The problem of "validating" attitudes becomes infinitely more complex when we move from more objective type attitudes to more subjective type ones, especially as measured by the PEP. When there is not even a specific behavior which can be employed to represent certain phenomenologic attitudes, it becomes theoretically unfeasible to attempt

even a "pseudovalidity" study as might be employed for more objective attitudes. How, for example, can one validate a patient's feeling that life holds new meaning (Future scale), that he understands himself and is self-reliant (Insight-Coping scale), that he feels lonely and confused (Distress scale), and so on? As with most other subjective or experiential states, there is no objective yardstick that can be used to determine their authenticity. Stated differently, there is no objective way to assess the difference between what a person claims he feels and what he *really* does feel. Face validity or phenomenologic validity must often substitute for more objective types of validation (Ludwig & Levine, 1965a).

With conceptual problems such as these, it might be tempting to discard subjective attitude measures as worthless outcome criteria. Succumbing to this temptation would be legitimate only if we were convinced that behavioral change were the primary goal of psychotherapy. This issue, however, is open to much debate. There are countless patients who come for psychotherapy not so much to change their behavior but rather to change their attitudes toward themselves and life. In these instances, the goal of therapy is to allow the patient to behave *more comfortably* rather than *differently*. We cannot ignore the authenticity and importance of these phenomenologic or attitude states for man simply because they do not lend themselves readily to objective validation by current methodological techniques.

Depending upon the therapist's or researcher's bias, either attitude or behavior change might represent the major goal of psychotherapy. This does not mean that these dimensions should be regarded as independent or unrelated but rather that their degree of relationship must be assessed.

Before interpreting some of the data bearing on this issue, I should like to make some brief comment on the evalua-

tion of behavior. Although it may be generally assumed that the measurement of behavior represents a much more reliable and objective criterion by which the efficacy of psychotherapy can be judged, this assumption must be subject to some qualification. Depending upon the reliability of the measuring instrument, it seems safe to suppose that the more specific and discrete the behavior to be evaluated and the more "black or white" its nature, the more "valid" the judgement. Such validity might be claimed for the Breathalyzer which we have employed to determine whether the patient has been imbibing alcoholic beverages shortly prior to obtaining the breath sample.

Although there may be a certain methodological elegance to employing such a measuring instrument, its clinical relevance and usefulness as a major criterion measure of behavior is far too limited. As one becomes concerned with more general clinical assessments of behavior, the specificity of behavior begins to diminish and its evaluation takes on much of the fuzziness and vagueness associated with attitudes. For example, if we consider drinking behavior over a period of time rather than evaluating whether a person has had a drink at a specific time, it is much more difficult to be certain of the validity of the rating.

There is another conceptual problem which must be dealt with in the assessment of more general and complex behaviors which are to be employed as criterion measures. Since it becomes practically impossible and theoretically unfeasible (i.e., the influence of the observer on the event observed) for the rater to follow the discharged patient around and record every bit of his behavior at specified intervals over a follow-up period, behavior ratings are forced to rely on reports of behavior given by the patient himself or some other knowledgeable informant rather than on direct observations of the behavior. Therefore,

given a highly reliable rating instrument, the accuracy of the ratings is directly proportional to the accuracy of the informant's report.

Turning now to the BRS, our initial results point up several interesting problems concerning the evaluation of behavior. Although our raters were able to attain a high degree of interrater reliability in the assessment of a patient's behavior, we have found the correlations between our assessment of a responsible relative's view and the patient's own view of his behavior to be of a much lower order of magnitude. It does not seem surprising that the subscales of Legal Adjustment and Employment, pertaining to more specific forms of behavior, should be most highly correlated of all the subscales. Drinking Pattern, which tends to represent the major bone of contention between the patient and his relative, gave the lowest order of correlation among the subscales.

The finding in the patient-relative correlations on the BRS which seemed most intriguing to us was the tendency for relatives to view much of the patient's behavior in a much worse light than did the patient. This overall discrepancy between patient and relative is reflected best in the Total Adjustment score. The question naturally arises whether the view of the relative is any more accurate than that of the patient. Unfortunately, I know of no way of validating either view. In all likelihood, the patient portrays his behavior in a more favorable light while the relative sees the behavior as much worse than it is.

Concerning the relationship between attitude and behavior, statistical analyses point up several interesting findings. Attitude (as measured by the PEP) and behavior (as measured by the BRS) tend to show some relationship only when correlations are performed for the same time interval. At the base-line period there is approximately a 10% common variance and at the 3-month postdischarge period

there is approximately a 15-40% common variance between certain of the PEP scales and the BRS Total Adjustment score. This lower order of common variance at the base-line period is quite understandable since patients are asked to report on their prehospital admission behavior and to record their attitudes while in the hospital. Change scores for the same time interval also give a common variance of approximately 15-40% for several of the PEP scales with the Total Adjustment score.

Correlational analyses also revealed another pertinent finding concerning the predictive relationship of attitudes to behavior. Generally, the results indicate that changes in attitude following therapy bear no relationship to changes of behavior recorded in patients following hospital discharge. Nor, for that matter, do initial scores on either attitude or behavior rating scales predict changes which may be recorded in behavior or attitude, respectively following treatment.

Pertaining to the matter of prediction, there are several suggestive findings when correlational analyses are performed between pre- and posttreatment behavior attitudes. The finding that the base-line Total Adjustment score and the Drinking Pattern subscale score did not correlate highly with scores obtained 3-months posthospital discharge may indicate that posttreatment behavior is not as greatly influenced by pretreatment behavior as one might be tempted to predict, or that the impact of therapy was capable of disrupting this presumed relationship.

The pre- and posttreatment correlations on the PEP attitude scales are revealing. From the PEP 1-2 correlations, it is apparent that base-line scores play an important role in determining scores 2-weeks posttreatment, regardless of the treatment administered. However, when correlations are performed between base-line and 3-month postdischarge scores, the magnitude of the correlations for

four of the six PEP scales diminishes considerably. Of interest was the finding that high correlations were sustained with the two scales which were least correlated with any concurrent behavior.

The implications of these preliminary results for studies designed to evaluate the effectiveness of psychedelic therapies, or other forms of psychiatric therapy, are considerable, especially if corroborated by further studies. First, despite the often dramatic change in certain attitudes following psychedelic therapies, there is currently no data to support the assumption that this change will be reflected in later behavior change. Even though it would prove tempting to predict the patient's later behavior on the basis of his response to therapy, as measured by the PEP, we cannot assume that a patient will function better simply because he claims to feel better.

Second, according to the results, there are no special attitudes or types of behavior measured prior to treatment which are capable of predicting significantly changes in behavior or attitude, respectively, following treatment.

Third, significant correlations between attitude and behavior can be found only when both dimensions are measured and analyzed concurrently at or over the same time period. There is the further implication that the patient's report of his past behavior is somewhat influenced by his feelings or attitudes at the time, or conversely, that his professed feelings and attitudes are influenced by his report of his behavior. To some extent, then, the patient tends to report "functioning as well as he feels" or "feeling as well as he has been functioning."

Fourth, even though concurrent analyses of attitude and behavior measures reveal a number of very significant correlations, the actual magnitude of the correlations does not seem sufficiently high for *practical* prediction of attitudes from behavior, or conversely, at any given point in time. There still appears

to be a *relative* independence between these two important outcome criteria, either of which has been employed often to measure the effectiveness of therapy.

Fifth, the "common-sense" assumption that posttreatment behavior can be accurately predicted from pretreatment behavioral assessments cannot be supported by the limited analyses undertaken.

Sixth, although scores obtained on base-line attitude scales strongly influence posttreatment scores, this relationship does not necessarily hold up for assessments at different time intervals or in different contexts (such as after the patient leaves the hospital).

Naturally, there are many pitfalls to my interpretations of this preliminary data. Although the PEP has considerable face validity ("concurrent validity" studies have proven highly satisfactory with an older version of the PEP), it may be possible that it is not tapping the more relevant subjective attitudes which bear on reported behavior. Studies with other types of attitude measures may show different results than those presented here (my own opinion to the contrary).⁸

In analysis of the data, I have not attempted to assess whether the relationship between attitude and behavior may be influenced by the particular treatment administered to patients.

It is also important to note that the implications of this study do not necessarily generalize to nonalcoholic patients. The patient's craving for or dependence on alcohol may be so powerful that even dramatic changes in attitude following treatment fail to have a measurable impact on later drinking and associated behavior. With other types of psychiatric patients, it seems quite possi-

ble that changes in attitude play a greater role in determining subsequent behavior.

Undoubtedly, many other conceptual and methodological problems could be mentioned which might add substantial qualifications to my speculations concerning this preliminary data. Nevertheless, given all these unresolved problems, it still seems quite clear that many of the issues raised by the present data have important implications for all studies attempting to evaluate the effectiveness of psychedelic-type and psychiatric therapies. Hopefully, further investigation of the intriguing relationship between attitude and behavior will yield more substantial answers.

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⁸Since the presentation of this paper, similar analyses were carried out with the CPI with somewhat comparable results.

Appendix A

SAMPLE ITEMS: PSYCHIATRIC EVALUATION PROFILE

Distrust

- 8. Most people tell lies to get ahead
- 16. Most people just don't give a "damn" for others.
- 43. A person is better off if he doesn't have to trust anyone

Great Cause

- 7. A man who does not believe in some great cause has not really lived
- 15. If given a chance I would do something of great benefit to the world

Future

- 3. I have a new lease on life
- 11. I look forward to the future
- 54. My life has changed for the better

Distress

- 1. I'm jittery and nervous
- 9. Everything seems hopeless
- 50. I feel so lonely

Insight-Coping

- 6. I understand myself
- 14. I have all the tools I need for solving my difficulties
- 38. I feel I have insight into my problems
- 51. With what I know, I feel I can cope with my problems

Format

Items answers: Very True—True—False—Very False

Appendix B

BRS STRUCTURED INTERVIEW

Patient's Name _____

Respondent's Name _____

Interviewer _____

Date _____

E. General

1. If living with others, not mentioned above, how do you get along with them?
2. What are family attitudes toward drinking? (wife, children, parents, sibling)

II. SOCIAL INTERPERSONAL RELATIONSHIPS

I. HOME INTERPERSONAL RELATIONSHIPS

A. Marital Status

1. What is your present marital status? (Divorce-Legal Separation)
2. Has this changed any within the past year (3 months)?
3. If married, is there any threat of divorce?
4. Who are you presently living with?

B. Wife

1. How do you and your wife get along?
2. How often do you have arguments and fights?
3. Do your arguments ever turn into physical fights?
4. How do you get along with your wife's family?

C. Children

1. Tell me a little about your children? (ages, sexes, interests, etc.)
2. How much contact do you have with your children? (sports, reading, games, time spent with children)
3. What are your children's attitudes toward you? (any differences between drinking and not drinking)

D. Parents and Siblings

1. Are your parents living?
2. How much contact do you have with your parents? (visits, letters, phone calls)
3. How do you get along with your parents?
4. Do you have any brothers and sisters?
5. How do you get along with them?
6. How much contact do you have with them? (visits, letters, phone calls)

A. Informal Groups

1. When you aren't with your family, with whom do you spend your time?
2. About how much time do you spend with friends?
3. What do you do with your friends?
4. Do you entertain at home?
5. How do you get along with your friends? (arguments, fights)
6. Do you have any close friends with whom you can confide and trust?

B. Formal Groups

1. Do you belong to any clubs or organizations? Which ones?
2. How much time do you devote to these organizations?
3. How often do you attend?
4. Are you interested in joining any organizations where you are not already a member? Which ones?

III. PERSONAL SOCIAL RESPONSIBILITY

A. Personal Responsibility and Community Responsibility

1. Do you have any goals?
2. What have you done towards reaching your goals?
3. What are your immediate plans for the future?
4. In what ways do you consider yourself independent?
5. In what ways do you consider yourself dependent?
6. Are you participating in community affairs? (voting, church, school, PTA, current affairs, service clubs or other)
7. Do you read any newspapers or magazines? (If so, which ones?)

B. Family Responsibility

1. What persons in your family are presently employed? (wife, children, etc.)
2. To what extent are you involved with the discipline and control of your children?
3. Who in your family makes the major decisions?
4. If divorced, are you paying alimony?

C. Economic Responsibility

1. Do you have any savings and/or insurance?
2. Do you own, rent, or are you presently buying your own home?
3. Do you own, or are you buying your own car?
4. Do you have any outstanding debts? If so, what are they? Approximately how much do you owe? How do you plan to pay them?
5. Are you or any member of your family receiving any aid? If so, what kind? Approximately how much? (VA; Pub. Assistance; AFDC, etc.)
6. Do you receive any financial help from friends or relatives? If so, how much?

IV: EMPLOYMENT

1. Are you presently employed or do you have a job waiting for you when you leave?
2. Are you satisfied with your job? If not, why?
3. Have you been unemployed within the past year? Fired? Why?
4. Is there presently a threat of loss of job?

5. What do you plan to do concerning employment when you leave the hospital?

V. DRINKING PATTERN

1. When do you drink? (any specific pattern, nearly all the time, periodic, weekends only, etc.)
2. What activities does your drinking affect?

VI. LEGAL ADJUSTMENT

A. Arrests

1. Have you been arrested?
2. How many times have you been arrested? Why were you arrested?
3. Have you been sentenced to a state or local institution?
4. Have you been placed on probation?
5. Has your probation been revoked?

B. Detention

1. Have you ever been held in detention?
2. Do you have a court appearance pending?

C. Arrest Threatened

1. Have you had a court appearance with or without fine, but no detention?

D. Adequate Legal Adjustment

1. Have you successfully completed any probationary period?
2. Have you been charged with any minor violations such as parking tickets etc. How many times?

ARP Behavior Rating Scale

Rated area	Rating value			
	1	2	3	4
I. Home interpersonal relationships				
(A) Current marital status	Divorce or legal separation	Judicial procedure begun for divorce or legal separation; or not living with each other	Threat of divorce	No threat of divorce or separation
(B) Conflict with wife	Constant conflict	Frequent conflict	Occasional conflict	Essentially congenial
(C) Contact with children:				
(1) Living with children	Little concern	Interest	Interest and some activity with children	Much interest and many activities with children
(2) Not living with children	No contact	Some contact	Frequent contact	Regular contact
(D) Contact with parents and/or siblings	No contact	Some contact	Frequent contact	Regular contact
II. Social interpersonal relationships				
(A) Informal groups				
(1) Friends	No friends	Few friends or primarily situational friends	Some friends	Some or many friends
	No contact with friends	Little contact with friends	Some contact with friends	Diversified relationships Adaptive interests
(2) Ways of handling conflict	Considerable physical aggression or Complete avoidance & withdrawal	Considerable argumentative behavior or "Gives in"	"Gets along"	"Give and take" relationship Able to meet stress situations adequately
(3) Satisfaction	Great dissatisfaction or Withdrawal	Some dissatisfaction or Uneasiness	Some satisfaction with relationship however limited interpersonal ability	Essentially satisfied
(B) Formal groups (clubs &)	No interest or membership (withdrawal or avoidance)	Expressed interest but no membership (participation)	Interest and some membership/participation	Active participation and membership in some or many groups with evidence of enjoyment

ARP Behavior Rating Scale (continued)

Rated area	Rating value			
	1	2	3	4
III. Personal social responsibility				
(A) Personal responsibility	No goals	Limited goals with no real effort to meet them	Limited goals with some effort to meet them	Goals with responsibility assumed (concrete plans)
and	Evasion or denial of responsibilities	May recognize obligations and responsibilities but little real effort to meet them	Recognizes and makes real effort to meet responsibilities and obligations	Accepts and takes full responsibility for self
Community responsibility	No recognition of responsibility as community member	Some recognition but little or no participation as community member	Some recognition and participation as community member	Recognition of community responsibility and active participation
(B) Family responsibility	Unable to meet role expectation	Limited ability to meet role expectations	Some ability to meet role expectations	Able to meet role expectations
(C) Economic responsibility	No recognition of financial obligations and responsibilities	Recognition of financial responsibilities but little real effort to meet them	Recognition and some success in meeting financial obligations	Fully accepts and successfully meets financial responsibility and obligations
IV. Employment				
	Two or more losses of jobs through quitting	One loss of job through quitting	Some threat of loss of job	Employed with evidence of satisfaction
	Fired; Prolonged voluntary unemployment	Uncertain employment; imminent threat of loss of job	Employed with dissatisfaction	Voluntarily idle because of retirement
	Constant failure to meet job requirements (primarily for self-employ)	Frequent failure to meet job requirements	Occasional failure to meet job requirements Unemployed but unemployment beyond patient's control (physical illness or disability, lay-off etc.)	Meeting job requirements (primarily for self-employed)

ARP Behavior Rating Scale (continued)

Rated area	Rating value			
	1	2	3	4
V. Drinking pattern				
	Absolutely an excessive drinker whose drinking interferes with essentially all functions of life	Excessive drinking which seriously disrupts certain areas of life's functions	Moderate or minimal drinking which threatens to disrupt certain of life's functions	No Drinking
	Essentially constant drinking	Periodic drinking	Controlled social drinking	
VI. Legal adjustment				
	Arrest resulting in sentence to state or county institution	Arrest resulting in detention in state or local institution	Court appearance with/without fine, but no detention	No legal problems
	and/or	and/or	and/or	and/or
	Revocation of probation	Sentence or court appearance pending	Repeated misdemeanor	Occasional misdemeanor
	or			and/or
	Placement on probation			Successful completion or probation