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**LA THÈSE A ÉTÉ
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AN EXPLORATION OF FEEDBACK TYPE AND
ITS RELATION TO CLIENT OPTIMISM

by

Cheryl Loughner

B.S., University of Pittsburgh; 1975

A Thesis

Submitted to the Faculty of Graduate Studies
through the Department of Psychology
in Partial Fulfillment of the
Requirements for the Degree
of Master of Arts at the
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1977

Ⓐ Cheryl Loughner 1977

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ABSTRACT

A study was done to explore the effect of psychometric feedback on client optimism. Optimism was divided into two components: attitude toward self and expectancy concerning outcome of self-initiated action. Based on previous feedback research, including feedback acceptability and social desirability issues, as well as evidence of fundamental differences between trait-descriptive and pathology-based feedback, the question of the effect of feedback on client optimism was examined. It was further predicted that if feedback did affect optimism, pathology-based and trait-descriptive feedback were likely to have a differential effect. Subjects were student volunteers from the University of Windsor. One half of the subjects completed the MMPI (Pathology-based) and one half completed the PRF (Trait-descriptive). All subjects also completed an optimism questionnaire after a 7 day interval. At a later date, feedback was given. One half of each group received 2 high scale statements and one half received 1 high and 1 low statement. The optimism questionnaire was immediately readministered. It was found that the attitude of the MMPI group was significantly less optimistic after they had received feedback. The PRF group showed a tendency toward a more optimistic attitude, but this shift was not significant. The post-feedback attitude difference between the two test groups was significant. The PRF group had a more optimistic attitude than did the MMPI group. In general, feedback had no effect on expectancy.

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CHAPTER I

INTRODUCTION

There has been a great deal of recent research on the topic of providing psychometric feedback to clients. Many of these studies center around differences in type of feedback and subsequent client reaction. The present study is an investigation of feedback as it relates to the client's optimism. This study explores the relation of feedback type and the degree of optimism that a client is likely to experience concerning himself.

Expectation Theory

A number of studies have suggested that an experimenter can influence the outcome of an experiment by his expectations of what is going to occur--whether the subjects are children, university students, or white rats (Crano & Brewer, 1973). That is, there is evidence that behavior can be influenced simply by expectations concerning that behavior. Although Rosenthal and Jacobson, the major proponents of this theory, have been subjected to methodological criticism, several surveys of the literature have added credence to their position. One such survey was conducted by Rosenthal himself (1973).

These experiments were conducted not only in the classroom but also with rats in mazes, counselees in high schools and colleges, and trainees in employment areas. He found that out of a total of 242 studies of the effect of expectations on performance, 35 percent provide evidence of a pygmalion effect at a significant level (5 percent).

That is nearly seven times greater than might be expected by chance (Gergen, 1974, p. 150).

An independent survey obtained similar results. Barber and Silver (1967) looked at 31 studies, 19 of which did not demonstrate an experimenter bias effect. They concluded that experimenter bias may at times influence experimental results and that "further research is needed to determine under what circumstances we are most likely and also least likely to obtain an experimenter bias effect" (p. 26). One of the suggested parameters is the subordinate-superordinate relationship often found in research that utilizes students as subjects.

Thus, it has been shown that simple expectations about a person's behavior may have a direct effect and become a self-fulfilling prophecy. For clinical demonstrations, see also Temerlin (1968) and Rosenhan (1973). For purposes of clarity, we might consider expectations both in terms of expectations some person has concerning a given individual, as well as the expectations an individual has concerning himself. Since expectations of others may result in a "self-fulfilling prophecy", it seems likely that self-expectations would be similarly effective. In fact, data from placebo studies suggest that both of these sources of expectancy are interacting. Beecher (1966) demonstrated that when the double blind procedure was used so that neither the experimenter or the subject knew what to expect, there was no difference in pain reduction between the placebo and the morphine group. On the other ~~hand~~, Reed and Witt (1965) report placebo induced "acid responses" in individuals who thought they had been given L.S.D. Clearly, the latter is

an instance of the subjects own expectation resulting in self-fulfillment.

In attempting to operationally define positive expectancy, it becomes clear that it is related to optimism. Webster's Dictionary defines optimism as "hopefulness; faith in favorable outcome" (Grosset Webster Dictionary, 1974, p. 414). Thus optimism consists of both an attitude component and an expectancy component. Positive expectancy, then, may be defined in terms of one's belief regarding some outcome (see Appendix A). The question then arises: What is the relationship between psychometric feedback and the client's optimism concerning himself?

The Question of Feedback

A general view of feedback and its functions is best provided by the original cybernetic literature. Wiener (1954) stated:

...Effective behavior must be informed by some sort of feedback process, telling it whether it has equalled its goal or fallen short. The simplest feedbacks deal with gross successes or failures of performance, such as whether we have actually succeeded in grasping an object that we have tried to pick up...However, there are many other forms of feedback of a more subtle nature" (p. 81).

Feedback may be viewed as the knowledge of results of some type of performance which is then used in regulation of that performance.

Annett (1969) agreed with the cybernetic perspective.

There are few actions which have no perceptible result and in most cases knowledge of results is important to the performer and will affect his future behavior (p. 11).

4.
Knowledge of results is clearly capable of being described as feedback information (p. 12).

This general stance on feedback may be applied to a clinical setting and the question of whether or not psychometric feedback should be provided for the testee. As regards this suggestion, the Ad Hoc Committee on Social Impact of Psychological Testing recommended,

...That more emphasis be given to research on the effects of communicating psychological information to parents, teachers, and students. There should be extensive experimentation with different methods of communication of such information by means of report cards, group and individual counseling, and other methods and instruments that might be invented... (Berdie, 1965, p. 144).

However, in spite of such recommendations, as well as APA guidelines for providing feedback (Ethical Standards for Psychologists, 1963), it is still true that "Psychologists are generally reluctant to share their information with the client" (Richman, 1967, p. 62). Various reasons have been cited for this reluctance. The client might not be strong enough to accept what he hears. He may become anxious. He might not understand and thus misinterpret the information. So the clinician guards great and potentially damaging secrets, emerging with a "magical image" of himself (Richman, 1967, p. 62). A closer look at the available data, however, is sufficient to alleviate these worries and, indeed, provides evidence supporting the desirability of feedback.

The question of whether or not to provide feedback depends, in part, on the definition and purpose of assessment. Anastasi (1967) stated that, "tests do not provide a technique for the rigid and static

classification of individuals' on the contrary, they are instruments for facilitating change in desired directions" (p. 302). Fischer (1973) agreed with and expanded upon this position. She suggested a contextual approach to assessment which focuses on an expansion of the client's life possibilities, rather than the more traditional, diagnostic, objectifying approach. Such dynamic, change-oriented definitions of assessment can best be implemented by client feedback. It is difficult to imagine how testing can be useful in client growth, if the "secret" information is not available to the client.

Although use of feedback is implicit in definitions of assessment just cited, the question may arise as to whether clients desire feedback. Evidence indicates that they do. Brim, Glass, Neulinger, Firestone & Lerner (1969) found that nearly three out of four respondents feel that students should be given specific information. Similar attitudes were found concerning reporting test results to parents.

Lanyon and Goodstein (1971) considered the issue from the view of the client's right to be informed and classify it as a confidentiality problem. "A different kind of confidentiality problem is related to an individual's right to know his own test results" (p. 204).

There are also suggestions that withholding test results disregards the dignity of the client and may damage his self-esteem. Richman (1967) feels that by withholding information to "protect" the client, "the client emerges as a rather weak being" (p. 62). Fischer (1972) feels that a traditional, "secret" files approach to assessment

"supports a client's belief that his fate lies in his 'traits' and his history, as well as in the hands of an expert. Such beliefs stultify development of personal responsibility, self-esteem, and purposeful effort" (p. 365). She further stated (1970) that a traditional handling of assessment actually impedes the client's growth. On the other hand, the social-descriptive-contextual method she advocated provides a client familiarity with the assessment report, which she feels contributes greatly to affirming the client's capability of dealing with his life (Fischer, 1973).

Apart from the rights and feelings of the client, there are other reasons for providing feedback that appeals to a more clinical motivation -- to facilitate the effective use of a test instrument. As early as 1959, Rudikoff and Kirk provided a set of guidelines for test interpretation which included the testee's reaction as a valuable source of information.

...The student himself has something to add to our understanding...It is an important principle in interpreting tests to implicate the student, implicate his participation, and, if possible, as it sometimes is, to secure his interpreting the test results to the counselor (p. 223).

Fischer (1970) carried the argument one step further. She feels that knowledge of the client's perspective is necessary for any understanding of the client. Furthermore, the client may provide a unique and valuable source of information since it is the client himself who is in the best position to confirm the evaluator's impressions.

Thus the benefits of psychometric feedback are twofold. By pro-

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viding the client with knowledge of results, his rights, dignity, and growth-opportunity may be safeguarded. And in turn, it is by providing this information that the examiner may make use of a unique source of information concerning the adequacy of his impressions.

In addition, it is felt by some that the withholding of test results has contributed to the poor public relations of psychologists (Balance, Sandberg, & Bringmann, 1971). If this is the case, then feedback may, apart from all its information-providing functions, also improve client-professional relationships.

What, then, has been the result in those cases where the examiner did provide feedback? The literature in this area is generally positive. Flook and Sagar (1962), looked at the effect of feedback on academic performance. They found that knowledge of previous test scores improved subsequent test scores.

In summary, the interpretation suggested is that knowledge of test scores acted like a catalyst, setting up in group K's (the group receiving feedback) members an elaborate chain reaction culminating in superior academic performance. It did so by first clarifying their relative standing in academic potential thereby creating an informed concern about future performance that impelled them both to work harder and to exploit fully the facilities available to all for maximizing academic success (p. 401).

Richman (1967) cited the evidence of his clinical practice to demonstrate the favorable effects of feedback. "For the past four years the writer has been accumulating clinical evidence that the skillful sharing of test results with the patient is often beneficial, especially for the very disturbed, when conducted by a psychologist

trained in both testing and psychotherapy" (p. 63).

More specific data is provided by Dressel and Matteson (1950), who tested the hypothesis that those clients who are more active in the test interpretation process gain more self-understanding than those who participate less. They developed a criteria for judging client participation that generally provided the client an opportunity to ask questions and express his opinions. Using a number of counselors, they found that measured gains in self-understanding correlated with the amount of client participation. The amount of participation attained differed from counselor to counselor.

The available literature shows favorable results when feedback techniques have been applied, both in academic and personality testing situations. What remains, then, is to take a closer look at the objections to feedback.

We may categorize the objections to feedback into two basic areas: the client may experience anxiety and be unable to cope with the information, and the client may not understand the feedback. As regards possible anxiety reactions, Bürger (1976) administered questionnaires after feedback sessions to ascertain the subjects' reactions to the feedback. He stated that "...while some negative effects were expressed in the open-ended questions, they represented some slight misinterpretations in the reports, and when clarification was made in the debriefing session the negative effects were dissipated" (p. 49). It therefore appears that feedback, on the whole, did not produce adverse reactions and that when any negative effect was noted, it was related to

lack of clarity in the feedback. Thus, one cannot clearly separate the issue of how the client reacts to feedback and the manner in which feedback is given.

The lack of adverse effects is also supported by Richman's (1967) clinical data:

It has been my consistent observation that in the hands of a properly trained person, the most delicate, basic, "deep" and "unconscious" material can be presented to an emotionally disturbed patient, and the results are salutary (p. 70).

In the area of client understanding, it seems to the writer that the issue has not been properly delineated. It has been posed as an issue of refusing feedback in order to safeguard the client against possible misinterpretation, when the possibility of misinterpretation actually stems from how the feedback is presented. (This will later be discussed more fully.) Furthermore, it is the tester's responsibility to see that information is sufficiently clear. The APA's Ethical Standards for Psychologists (1963) makes this explicit:

Test results or other assessment data used for evaluation or classification are communicated to employers, relatives, or, other appropriate persons in such a manner as to guard against misinterpretation or misuse. In the usual case, an interpretation of the test result rather than the score is communicated.

When test results are communicated directly to parents and students, they are accompanied by adequate interpretative aids or advice (pp. 5-6).

Related to the question of client misunderstanding is the question of why a client presents himself for testing in the first place, a question that has up to now been totally overlooked. All available

literature concerning psychometric feedback assumes that the commodity which the client is looking for is the information contained in his test results, and it is clearly an informational function that the present study is concerned with. However, consider the situation in which assessment precedes acceptance or rejection of the client as a candidate for psychotherapy, for example. In such a case, the feedback the client seeks is the examiner's behavior of accepting him, not the information yielded by the test results. We may thereby distinguish between pragmatic and informational feedback. Watzlawick (1967) clearly described the pragmatic level: .

Our main point is that interpersonal systems - stranger groups, marital couples, families, psychotherapy, or even international relationships, etc., - may be viewed as feedback loops, since the behavior of each person affects and is affected by the behavior of each other person (p. 31).

Apart from the content of any interaction (in this case, information feedback), one must bear in mind the relationship between the participants, and the part this relationship plays in the communication. It is by virtue of his position of authority, relative to the client, that the examiner (cited above) is capable of pragmatic feedback. That is, the examiner's decision will have a direct, pragmatic impact on the client's life. As Watzlawick (1967) stated, "Every communication has a content and relationship aspect such that the latter classifies the former and is therefore a metacommunication (A communication about a communication)" (p. 54).

Given these circumstances, it is the responsibility of the exam-

iner to set the stage, to describe the function assessment, as that of providing information. Since there is a dearth of information on client motivation for seeking assessment (and it may often be pragmatic rather than informational), this study will try to ascertain why subjects presented themselves for testing. In this way the writer hopes to provide some initial information concerning what has been, up to now, an entirely overlooked problem.

Both theoretical and empirical evidence consistently favor the provision of psychometric feedback to clients. As Balance, Sandberg & Bringmann (1971) stated: "...the issue is clearly not whether to give feedback to the client or not but to gear the whole assessment procedure to fulfilling his need for information in a useful and acceptable manner" (p. 540).

The Optimal Use of Feedback

In considering the optimal use of feedback, we are considering those characteristics of feedback that render it most useful to the client. Anderson (1968) has defined useful feedback as feedback that the recipient can understand and accept, and is able to do something about. A survey of available evidence concerning the effects of various feedback types generally corroborates this paradigm. The literature yields three major areas of consideration; clarity of feedback, acceptability of feedback, and the effects of the theoretical constructs upon which the feedback is based.

The issue of clarity pertains, in part, to the type of language

used. Fischer (1970) advocates the use of everyday, layman's language in providing feedback, in reporting to the client as well as anyone else who may be receiving a report. "If the report receivers are to comprehend the clients world as he experiences it, then that is what the report should describe" (p. 73). Rudikoff and Kirk (1959) agreed that the language of feedback should relate to the client's life experience, writing, "The interpretation that we attempt is in terms of its relation to the counselee's life experience..." (p. 224).

This advocacy of descriptive language is backed up by the lack of clarity that is encountered with a "sickness" or pathology-based language. Balance, Hirschfield and Bringmann (1970) in a discussion on the term "mental illness" came to the conclusion that the term has been rendered "...into a label for a hodgepodge of uses which are incapable of providing clear communication" (p. 137).

Length of feedback also appears to be an important consideration. Burger (1976) found that subjects receiving feedback preferred longer rather than shorter feedback, as judged by their ratings of feedback usefulness. It seems quite probable that longer feedback provides a greater degree of clarity by means of increased information content. Therefore feedback length should be considered in attempting to gain maximum clarity, and is related to feedback utility in general. Burger stated, "For psychologists looking to maximize positive effects in giving feedback, the findings suggest that the quantitative or length of report factor must be considered important" (p. 47).

Thus, available evidence suggests that clarity of feedback is

related to A) type of language used, with the suggestion that descriptive, everyday language is clearer and hence more useful, and B) length of feedback, with recipients stating that longer feedback is more useful.

Of equal importance as the question of clarity is the question of acceptance. Client acceptance is, of course, crucial for its utility, since the client cannot make use of any information he does not accept. The early work on acceptability or endorsement was done by Edwards (1953). He found a positive correlation between the judged social desirability of an item and client willingness to endorse the item as true of self. That is, subjects are more likely to endorse those items judged as socially desirable. This, in and of itself, does not seem very useful for our purposes. The examiner cannot simply provide totally positive feedback. However, more recent studies show that ratings of social desirability depend on the type of feedback statement used.

Bellehumeur (1976), using both a student and a prison population, compared feedback from the MMPI (which yields pathology-oriented feedback statements) and the PRF (which focuses on normal functioning). He found that "the mean pathology ratings of the descriptive feedback statements corresponded negatively with the ratings of social desirability of the same statements for both groups" (Bellehumeur, 1976, Abstract). Therefore, it would be expected that statements with high pathology ratings would be less frequently endorsed. This is exactly what Bellehumeur's results showed. "Subjects from both populations endorsed the

non-pathological descriptive feedback statements of the PRF over the pathology oriented statements from the MMPI)" (abstract).

Similar results were obtained by Price (1971), who compared PRF feedback and DPI feedback. (The DPI is designed to measure psychopathology.) Judges rated the DPI statements as more indicative of pathology. Subjects receiving feedback endorsed the PRF statements as more highly descriptive of self. In fact, ratings of pathology of the feedback statements proved to be predictive of the subject's tendency to reject those statements as true of self.

It is clear that in searching for an optimal feedback style examiners must keep in mind the low acceptance of pathology-oriented feedback statements (see also Sundberg, 1961). Descriptive statements, based on constructs of normal functioning, have more utility for the client since he can accept the information and consequently use it.

Price concluded:

...Descriptive feedback statements using the health-illness terminology of the medical model creates problems in the communication of test results to clients because such statements are viewed as indicative of psychopathology and are not looked upon as being socially desirable. Consequently, resistance against their acceptance develops (p. 48).

Anderson (1968) expressed a similar view based on his experience in group work. He has found that "a person will be more likely to listen to any negative feedback you wish to give him if you simply describe to him what you have seen, and the effect it has on you if you want to be heard, avoid any suggestion of 'judging' him as a per-

son" (p. 24). Using feedback judged to be indicative of pathology and socially undesirable must surely constitute a judgement.

The above results indicate that acceptability of feedback information is highly dependent on the constructs upon which the statements are based. Balance, Sandberg and Bringmann (1971) drew the same conclusion. Trait-descriptive statements are more readily accepted than pathology-based statements and will therefore result in less client resistance to using the information in a constructive manner, or heeding any advice that may be offered by the examiner. Any resistance that develops would interfere with Anderson's third criteria for useful feedback--the recipient must be able to do something about it.

The effects due to the construct upon which feedback statements are based are more numerous than just those involving acceptability. To the extent that they are accepted, there is evidence of a host of negative consequences that might result from unwise use of pathological feedback statements.

Fischer (1971) stated that the practice of withholding feedback from clients is grounded in the natural science foundations of psychology. Ullman and Krasner (1965) defined the natural science or medical approach as follows:

By the disease or medical model we mean that the individual's behavior is considered peculiar, abnormal or diseased because of some underlying cause. The analogy is made to physical medicine in which germs, viruses, lesions, and other insults foreign to the normal working of the organism lead to the production of symptoms (p. 2).

This perspective entails strong implications for the client re-

ceiving this type of information about himself. If his feedback indicates that he is "sick", he must place himself in the hands of professionals who are equipped to deal with such things. "...It follows logically that the professional, knowing more than the client, must assume major responsibility for him" (Fischer, 1972, p. 366). Hence, medically-pathologically oriented feedback may instill a type of dependency and helplessness in the client.

Burnham (1961) argued even more strongly. He stated that forcing a client to accept a "sick" role produces a self-image of failure, inferiority and weakness. He further cites cases of actual increase in "sick" behavior due to forced acceptance of a sick role.

Kleinplatz (1973) studied sick role compliance and related measured differences in pathology to differential role compliance. On personality measures, "...regardless of examiner status, compliant short-term patients score in a manner that presents a more pathological picture than do non-compliant short-term patients..." (p. 48).

Evidence previously cited shows that pathological-based feedback is less useful than descriptive feedback in both the clarity and acceptance components. It further appears that a "labeling of pathology" function of assessment may have wide-spread consequences for the recipient, concerning how he views himself (as indicated above) as well as how others view him and react to him.

Such labels, conferred by mental health professionals are as influential on the patient as they are on his relatives and friends, and it should not surprise anyone that the diagnosis acts on all of them as a self-fulfilling prophecy. Eventually, the patient himself accepts the diagnosis, with all of its surplus meanings and expectations and behaves accord-

ingly (Rosenhan, 1973, p. 254).

Thus, a discussion of feedback leads directly into the topic of expectation.

Statement of the Problem

Barber and Silver (1967) suggested that it is important to look at the context of a given interaction when considering whether or not an expectancy effect is likely to occur. They further suggested that a superordinate-subordinate relationship may be a salient variable, since a great deal of expectancy research has been done with students (therefore subordinate to the researcher) as subjects. In line with Barber and Silver's suggestion, since the examiner-examinee relationship is a decidedly unequal one, the testing situation may prove a particularly fertile ground for the development of expectations. Rosenhan's (1973), and Burnham's (1961) work provide more-direct evidence of expectation phenomena operating in clinical situations. There are therefore sound theoretical and empirical reasons for examining the relationship between psychometric feedback and the expectancy component of optimism. Since study has shown that feedback statements may be more or less socially desirable and acceptable to recipients (largely dependent on feedback type), it is also relevant to explore the effects of feedback on client attitude concerning himself. (see Price, 1971).

In general, the two types of feedback under consideration in this study, trait descriptive and pathological, have basic differences which

are likely to cause them to differentially affect the recipients.

Trait-descriptive feedback is based on constructs of normal functioning. There are indications that trait-descriptive statements are clearer and thus provide more information than pathological statements (See Fischhoff, 1970). This added information may provide the client with a better grasp of his situation and alternatives, thereby giving him a clearer pathway to action (see Anderson, 1968).

Pathological feedback, on the other hand, is based on constructs of abnormality. Such statements are negatively related to social desirability and subjects are less likely to endorse this feedback as true of self than trait-descriptive feedback (see Price, 1971). A number of studies have shown that acceptance of pathological labels may directly affect self-esteem, individual responsibility, and amount of "sick" behavior exhibited (see Rosenhan, 1973, Kleinplatz, 1973, and Burnham, 1961).

Although much work has been done concerning feedback type and how it affects such variables as client acceptance of feedback, there has been no research on the question of effect of feedback on client optimism. This is an important oversight since the major objection to providing the client with feedback has traditionally been the adverse effects such information might have on him. The present study will provide a direct measure of possible adverse, or positive reactions by tapping changes in optimism. It is the purpose of this study to:

- 1) Explore the effects that receiving psychometric feedback has

upon client optimism. If feedback does affect client optimism, there should be a significant difference in optimism scores before and after feedback has been received.

2) Determine if feedback type effects client optimism. If feedback type is a salient variable, it should be reflected in discrepant post-feedback expectancy scores between groups receiving MMPI (pathological) and PRF (trait-descriptive) feedback.

CHAPTER II

METHOD

Setting and Subjects

This study was performed at the University of Windsor. The subjects were 56 undergraduate psychology students who volunteered their participation. Subjects were told that their participation involved taking a psychological test and that they would receive information concerning their test results.

Instruments

1) Minnesota Multiphasic Personality Inventory (MMPI) Form R*.

The MMPI is a personality test first published by Hathaway and McKinley in 1943. It is expected that subjects 16 years of age or older can complete the inventory without difficulty. The MMPI consists of 550 statements covering a range of topics to be answered true or false.

These items compose the nine original clinical scales, as well as the three validating scales (see Appendix B). The clinical scales "were named for the abnormal conditions on which their construction was based" (MMPI Manual, 1967, p. 7).

Although clinical scale development was based on abnormality, these scales have been shown to be a meaningful measure for behavior

*Summarized from the MMPI Manual (1967) and Dahlstrom, Welsh, and Dahlstrom (1960).

that falls within the normal limits. Thus, a high score on any given scale is indicative of that trait to an abnormal degree, while a more moderate score indicates a trait within the normal range.

MMPI validity has been demonstrated by Dahlstrom and Welsh (1960), Kostlan (1954) and Sines (1957). MMPI reliability has been demonstrated by Cottle (1950), Hathaway and McKinley (1940), Mendelsohn, Penman and Sckiele (1959) and Rosen (1953).

2) Personality Research Form, Forms A and B*. The PRF is a personality test developed by Douglas N. Jackson (1967). The starting point of its construction was the set of traits described by Murray in his *Explorations In Personality* (1938). It therefore yields personality scores relevant to a wide variety of normal, everyday functioning rather than scores relevant to psychopathology.

Forms A and B are parallel, each with 330 items divided into fifteen 20-item scales (see Appendix C). Forms AA and BB are longer, each with 440 items and an additional seven scales. All areas deemed most relevant to personality functioning are included in the shorter forms. All forms contain one validity scale.

PRF Scales are explicitly bi-polar, with half the items for each scale written in terms of one pole of the dimension, and the other in terms of the opposite pole. Thus, both high and low scores are important in determination of personality characteristics.

PRF validity and reliability have been demonstrated by Jackson

*Summarized from the PRF Manual, (1967).

and Guthries (1967), Jackson and Lay (1967) and Kusyszn (1968).

3) Optimism Scale. This scale was developed by the author to provide a measure of optimism. Optimism is defined in terms of two components a) attitude about one's self and b) expectancy concerning outcome of self-initiated action. Adjectival phrases descriptive of these attitudes are used in the scale. These adjectives were derived from standard dictionary meanings of optimism. Each component consists of a five-point Likert-like Scale (see Appendix A).

The optimism measure may be looked at both in terms of the separate numerical value of each component (1 to 5, with 5 indicating the highest degree of optimism) and the pooled numerical value of the components.

4) Feedback Library. The PRF statements are those developed by Balance, Bringmann and Price (1971). The ~~MMPI~~ statements were developed by Balance and Bellehumeur (1975) and were tested on a college population in Bellehumeur's thesis (1975). His subjects were able to discriminate those statements which came from their own test results from those which were randomly selected. The final feedback library is composed of 62 descriptive statements.

5) Motivation Questionnaire. In an effort to gather some data on the subjects' motivations for participating in testing, the examiner devised a short questionnaire to enable subjects to indicate the reasons they volunteered for this study (see Appendix D).

Procedure

All subjects were randomly assigned to either the MMPI Group (A₁)

or the PRF Group (A_2). Group A_1 was administered the MMPI and Group A_2 the PRF in a group setting. Approximately one week later, all subjects were given the optimism scale. All tests were hand scored and individual profiles were plotted.

For feedback purposes, each group was randomly divided into two equal sub-groups. The B_1 subgroups received descriptive statements about their two highest scales, while the B_2 sub-groups received one statement about their highest scale and one statement about their lowest scale.

Feedback was given to all subjects about three weeks after the initial testing by means of the appropriate pair of statements printed on a 3 x 5 card. Cards were distributed to the subjects in a group setting. Immediately following the issuing of the feedback, all subjects were again given the Optimism Scale to complete. After all the scales were completed and returned to the examiner, each subject was given a short questionnaire to ascertain his primary motive for participating in the study.

Upon completion of the motivation questionnaire, all subjects were verbally debriefed. The author further made herself available to anyone wishing individual explanation or discussion of test results.

Statistics

To determine the effect of feedback on optimism scores, a 3 factor multivariate analysis of variance with one repeated measure was employed (S.A.S., 1972). This programme also provided a univariate

analysis of variance on individual and pooled components of the optimism scale, as well as the correlation between the scale components. The factors were as follows: 1) optimism score: pre and post, 2) test-type: MMPI and PRF, and 3) feedback.condition: high-high and high-low. Although all participants received feedback, invalid profiles were eliminated for purposes of statistical analysis. Analysis of simple effects were used to determine significant differences between cells (Winer, 1971).

CHAPTER III

RESULTS

An initial 2 x 2 x 2 multivariate analysis of variance with one repeated measure was employed to determine the effect of feedback on optimism. The results are summarized in Table 1. As expected, there was a significant test-type effect. That is, over-all, there was a significant difference in optimism scores between the MMPI and the PRF groups. The test-type x optimism interaction was also significant. This indicates an interaction between pre and post-feedback optimism scores (to be discussed in detail below).

The attitude and expectancy components of optimism had a correlation coefficient of 0.3165. Since the components exhibited considerable discrepancy individual ANOVA's for each component were also employed.

Attitude

A 2 x 2 x 2 analysis of variance was used to determine the effect of feedback on client attitude. The results of this analysis are summarized in Table 2. As with the analysis of weighted components, there was a significant over-all test effect and a significant test-type x optimism interaction. Analysis of simple effects are summarized in Table 3.

The analysis of simple effects indicated that, as expected, there was a significant difference in optimism of attitude before and

Table 1

Multivariate Analysis of Variance for Attitude
And Expectancy Components of Optimism

Multivariate Analysis of Variance			
Source of Variation	df	F	p
Test-Type (A)	(2,51)	2.535	0.033*
Feedback Condition (B)	(2,51)	0.018	0.983
Test-Type* Feedback Cond. (A*B)	(2,51)	0.785	0.535
Optimism Score (C)	(2,51)	0.210	0.813
Test-Type x Optimism Score (A*C)	(2,51)	4.383	0.017*
Feedback Cond. x Optimism Score (B*C)	(2,51)	2.951	0.059
Test-Type x Feedback Cond. x Optimism Score (A*B*C)	(2,51)	1.407	0.253

*Hotelling-Lawley's Trace, Significant at the .05 Level

Table 2
Analysis Of Variance for the Attitude
Component of Optimism

Analysis of Variance					
Source of Variation	df	MS	F	P	
Test-Type (A)	1	5.580	4.247	0.042*	
Feedback Condition (B)	1	0.009	0.007	0.932	
Test-Type x Feedback Condition (A*B)	1	2.009	1.529	0.220	
Error [Between]	52	1.314			
Attitude Score (C)	1	0.080	0.141	0.710	
Test-Type x Attitude Score (A*C)	1	4.723	8.295	0.006*	
Feedback Condition x Attitude Score (B*C)	1	0.080	0.141	0.710	
Test-Type x Feedback Cond. x Attitude Score (A*B*C)	1	0.009	0.016	0.896	
Error [Within]	52	.569			

*Significant at .05 Level

Table 3
Simple Effects Of Attitude Component
Of Optimism

	SS	df	2nrms error	F
A At C1	1.0048	(1,52)	52.724	0.019
A At C2	575.9424	(1,52)	52.724	10.924**
C At A1	168.935	(1,52)	31.864	5.302*
C At A2	99.976	(1,52)	31.864	3.437

**Significant at .01 level

* Significant at .05 level

after feedback within the MMPI group. The attitude scores of the MMPI group were significantly lower after feedback had been received. The pre, post-feedback difference in the PRF group did not achieve significance, although there is a discernible trend which is approaching a significant level. The attitude of the PRF group tended to become more optimistic after they had received feedback. Thus, for the MMPI group the expectation that feedback would affect attitude was supported.

A comparison of the two test-types after feedback shows that the attitude difference after they had received feedback was significant. This supports our speculation that pathology-based and trait-descriptive feedback are likely to differentially affect attitude (see Figure 1).

Expectancy

Analysis of variance with expectancy as the dependent measure is summarized in Table 4. Contrary to predictions the test-type effect was not significant. Test-type had no effect on the optimism of subjects expectancies. Similarly, the test-type x expectancy effect did not achieve significance. Thus, there was no significant difference between pre and post-feedback expectancy for either the MMPI or the PRF group. Neither was there a significant post-feedback expectancy differential between the two test types.

On the other hand, the feedback condition x optimism interaction proved to be significant. That is, receiving two high scale feedback statements vs. one high and low scale statement interacted with the

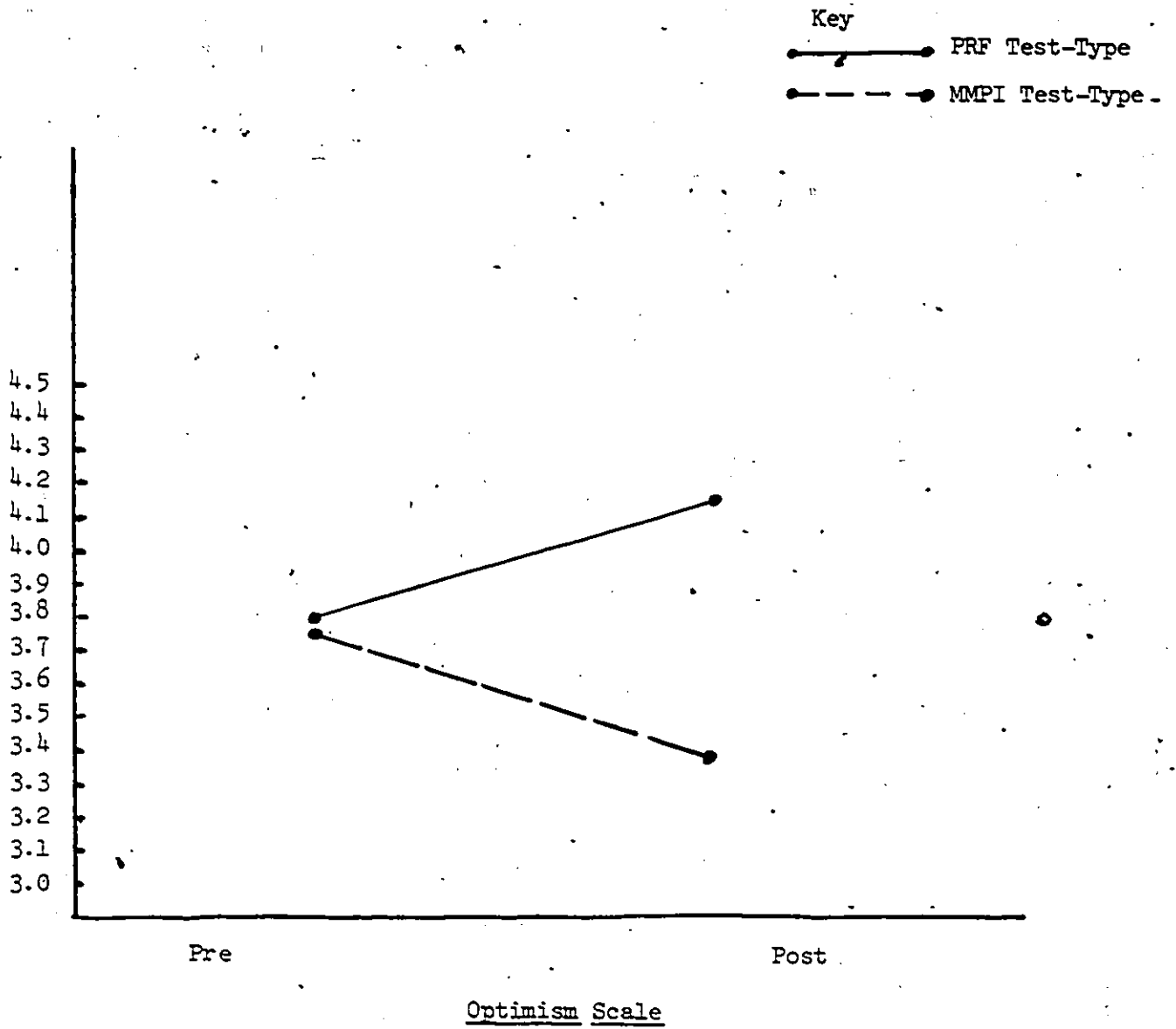


Figure 1. Attitude Scores As a Function of Test Type.

Table 4

Analysis of Variance For the Expectancy
Component Of Optimism

Analysis Of Variance					
<u>Source Of Variation</u>	<u>df</u>	<u>MS</u>	<u>F</u>	<u>p</u>	
Test-Type (A)	1	0.223	0.316	0.583	
Feedback Condition (B)	1	0.009	0.013	0.907	
Test-Type x Feedback Condition (A*B)	1	0.080	0.114	0.736	
Error [Between]	52	0.705			
Expectancy Score (C)	1	0.080	0.319	0.381	
Test-Type x Expectancy Score (A*C)	1	0.080	0.318	0.581	
Feedback Condition x Expectancy Score (B*C)	1	1.509	5.986	0.017*	
Test-Type x Feedback Cond. x Expectancy Score (A*B*C)	1	0.723	2.869	0.092	
Error [Within]	52	0.252			

*Significant at the .05 Level

expectancy response. Analysis of simple effects (see Table 6) indicated that this interaction was due to the significant difference between pre-and post-feedback expectancy scores in the group that received one high and one low feedback statement. This group had significantly lower expectancy after they had received feedback. A further analysis of effects within each test-type revealed no significant differences, although members of the PRF group receiving one high and one low feedback statement showed a downward trend in expectancy.

In general, feedback type (pathological vs. trait-descriptive) has no effect on expectancy. Therefore the significant test-type effects found in the ANOVA are due almost entirely to the attitude component.

Motivation

In response to the question of what motivated their participation in this study, approximately 21% of the subjects replied that they had participated primarily for the extra credit that they would receive in their class (see Table 7). In other words, over one quarter of the subjects participated for pragmatic as opposed to informational reasons.

Approximately 39% of the subjects indicated that a desire to learn something about themselves was the primary motive for their participation. 14% demonstrated mixed motivation involving both of the above factors. Nearly 20% specified other reasons, which ranged

Table 5

Summary Table of Means On Attitude And
Expectancy Components of Optimism

	Att.	$\frac{A}{-}$ Exp.	
A ₁	3.6250	4.2857	n = 56
A ₂	4.0714	4.1964	

A*C

C₁

C₂

	Att.	Exp.	Att.	Exp.	
A ₁	3.8571	4.2857	3.3929	4.2857	n = 28
A ₂	3.8929	4.2500	4.2500	4.1429	

B*C

C₁

C₂

	Att.	Exp.	Att.	Exp.	
B ₁	3.8571	4.1429	3.8571	4.3214	n = 28
B ₂	3.8929	4.3929	3.7857	4.1071	

A*B*C C_1 C_2

		Att.	Exp.	Att.	Exp.
A_1	B_1	3.7143	4.2143	3.2857	4.2857
	B_2	4.0000	4.3571	3.5000	4.2857
$n = 14$					
A_2	B_1	4.0000	4.0714	4.4286	4.3571
	B_2	3.7837	4.4286	4.0714	3.9286

Table 6
Simple Effects Of The Expectancy
Component Of Optimism

	SS	df	2nr MS(Error)	F
B At C1 .	49	(1,52)	26.796	1.828
B At C2	36.048	(1,52)	26.796	1.384
C At B1	24.98	(1,52)	14.112	1.770
C At B2	64.038	(1,52)	14.112	4.538*
A2B At C1	25.008	(1,52)	26.796	0.933
A2B At C2	35.988	(1,52)	26.796	1.343
C At A2B1	15.998	(1,52)	14.112	1.134
C At A2B2	49.000	(1,52)	14.112	3.472

Table 7 ~

Response To Motivation Questionnaire

Response	n	%*
Primarily For Extra Credit	15	26.785
Primarily To Learn Something	22	39.285
Both	8	14.285
Other	11	19.643
TOTAL	56	99.998

*Rounded to 3 Significant Figures

from a desire to be helpful to seeing how well their picture of themselves would align with what a personality test had to say. The latter group of responses overlap somewhat with the information-motivated group, but are different in that these subjects felt that they had a clear picture of themselves and were more interested in the alignment of test results with that picture.

These results indicate that clinicians cannot assume that a client's primary motivation in taking tests and receiving feedback is to gain a better understanding of himself. Over one fourth of the subjects in this study were primarily concerned with the pragmatic results of their test-taking rather than the direct information content.

CHAPTER IV

DISCUSSION

This study was an exploration of the effect of psychometric feedback on client optimism. Interestingly enough, the two components of optimism, attitude toward self and expectancy concerning the outcome of self-initiated action, proved to be poorly correlated with each other. Thus, expectancy and attitude vary independently of each other and must therefore be considered separately in exploring the effects of feedback. Beyond a general exploration of the effect of feedback, it was further speculated that the test-type from which feedback was drawn (pathological vs. trait-descriptive) might have a differential effect on the recipient's optimism.

The Effect of Feedback on Optimism

Results demonstrated that feedback did indeed have an effect on the attitude component of optimism. Comparing pre and post-feedback attitude within the MMPI group, it was found that subjects were significantly less optimistic in attitude after receiving pathology-based feedback. The group receiving PRF feedback did not demonstrate an attitude shift that achieved significance. However, in spite of this lack of significance, a clear trend was discernible in that the attitude of recipients of trait-descriptive feedback tended to increase in optimism after feedback was given. We may state then that pathology-based feedback exerts a negative effect on the attitude of the recipient, whereas trait-descriptive feedback is, at worst, neutral.

Although all we can state with certainty at this point concerning trait-descriptive feedback is that it is at worst, neutral, a closer examination of the dependent measure explains possible reasons why the PRF attitude shift did not reach significant levels. The attitude scale that was used was a 5 point scale, thus giving it a spread smaller than the typical 7 point scale. In addition, the standard deviation of this measure was only 0.997, with an over-all mean of 3.85. Clearly, this is a highly truncated measure and therefore was probably relatively insensitive to tapping variations in attitude.

Subjects were clumped together near the positive end of the scale. This may be due, in part, to the overlooked possibility of a socially-desirable response set which caused self-report of attitude to be skewed in a positive and more acceptable direction.

In light of a clear and consistent trend demonstrated by the PRF, as well as the significant post-feedback discrepancy between the MMPI and the PRF, it is likely that the failure of trait-descriptive feedback to produce a significant effect on subject attitude is due to the insensitivity of the measure.

As regards our second speculation, it is quite clear that trait-descriptive and pathological feedback have different effects on subject attitude. A comparison of the post-feedback attitudes of the two test groups clearly shows a significant differential effect of attitude between the two groups. PRF recipients indicated a significantly more optimistic attitude after feedback than did the MMPI

recipients.

The expectancy component of optimism, on the other hand, yielded quite different results. Contrary to expectations, test-type had no effect whatsoever on subject expectancy. There was no significant difference for either the PRF or the MMPI between pre and post-feedback expectancy. Neither was the post-feedback difference between the two groups significant. Thus our speculation concerning the effect of feedback type on expectancy is not confirmed.

There was, however, an apparent relation between the condition of feedback and expectancy. Subjects receiving one high and one low feedback statement as opposed to two high statements demonstrated less optimistic expectancy after they had received feedback than they did prior to it. This finding is quite surprising and difficult to interpret, since the PRF yields bi-polar statements. That is, while a high scale statement on the MMPI is negative, and a low scale statement is positive, no such distinction is possible on the PRF since a high statement may be positive or negative and vice versa. In addition one would expect that the high-high group would have less optimism than the high-low group, since one-half of this group received two negative pathology-based feedback statements.

In an effort to clarify this problem, feedback condition was examined within each test-type. For either the MMPI considered alone or the PRF considered alone, there was no significant difference between the high-high and the high-low feedback conditions. Significance

is only achieved when the two tests are considered additively. This has considerable implication for the practical importance of the feedback condition. That is, although both tests pooled resulted in a significant effect, in neither test alone did feedback condition significantly affect expectancy. This indicates that in typical testing situations (using either the MMPI or the PRF), feedback condition would have no appreciable effect on client expectancy.

It will be recalled however, that although there was no significant effect within the PRF group, there was some trend in the high-low condition for expectancy to decrease. Such a trend did not occur within the MMPI group. This trend is inexplicable on the basis of theory-- therefore we must look at the feedback statements themselves for a possible explanation. Considerably more effort was put into developing the high-scale statements, with low-scale statements being developed secondarily as negations of the high. This may have resulted in a lack of precision and clarity, which would diminish their impact. The low-scale statements of the PRF feedback library may be problematic and in need of modification.

Implications For Feedback

The above findings have direct implications for the use of psychometric feedback, relating both to the optimal use of feedback and whether or not feedback should be supplied at all. We have previously cited evidence concerning the optimal use of feedback, all of which pointed to trait-descriptive statements as more useful than pathology-

based statements. Edwards (1953) documented the fact that individuals are more willing to endorse an item as true of self if it is judged to be socially desirable. This effect operating in the acceptance of feedback statements has been documented by Bellehumeur (1976) and Price (1971). Subjects were more willing to endorse non-pathological descriptive statements as true of self than the socially undesirable pathology-based statements.

The message for effective feedback use is clear; clients must be able to accept a statement as true of themselves before they can use it as important information. Thus, the constructs ("sickness" vs. trait-descriptive) upon which feedback is based directly affect its usefulness. In addition, there is a host of evidence indicating adverse effects of acceptance of a "sick" role (see Kleinplatz, 1973 and Burnham, 1961).

The results of the present study corroborate the above findings. Pathological (MMPI) feedback has an adverse effect on subject attitude toward self. No such negative effect results from trait-descriptive (PRF) feedback, and, in fact, there is some indication that such feedback may produce a positive-effect. The findings clearly point to the use of trait-descriptive feedback.

As for the second issue, whether or not to provide feedback at all, the traditional argument against feedback has been the possible negative effects, anxiety and discomfort, the individual might suffer if such information were revealed to him. The findings of this

study firmly squelch such objections. Looking at the expectancy aspect of optimism, it will be recalled that there was no significant change in expectancy for either the MMPI or the PRF group. That is, although feedback may affect one's attitude (if it is pathology-based), it does not affect one's expectations concerning ability to execute successful actions.

To the extent that expectations result in self-fulfilling prophecies that effect an individual, feedback has a completely neutral effect. No adverse self-fulfilling prophecies will develop even if a clinician uses assessment instruments based on constructs of psychopathology. Any possible objection to feedback can be totally circumvented by utilizing trait-descriptive feedback. Even if pathology-based feedback is given, its effect is restricted to attitude. The recipient maintains his expectancy level concerning his ability to effect successful outcome.

Motivation

Up until now, feedback literature has not dealt with the distinction between pragmatic and informational feedback. Pragmatic feedback involves some behavior taken by the examiner as a consequence of the client's test results, for example accepting a client for psychotherapy. This is quite apart from feedback which takes the direct form of communicating information obtained by the testing procedure. This distinction has been ignored and there is a total lack of infor-

mation dealing with why a client takes tests in the first place.

(We are dealing here only with voluntary test taking.)

In an effort to fill this gap a bit, subjects in this study were asked why they participated. Prior to any testing, prospective subjects were informed that their participation would involve taking a personality test and that they would receive some feedback of their results. They were also informed that several marks would be added to their grade for their participation. Each subject, therefore, could have been motivated primarily by the opportunity to reap the pragmatic gain of a few marks added to his grade average.

Responses to the questionnaire indicated that over 25% of the participants volunteered for pragmatic reasons—in order to gain points for their grade. 39% participated primarily to learn something about themselves and 14% indicated that both pragmatic and informational reasons were equally important to them. Nearly 20% preferred to specify their own motive which they felt belonged in neither category. These reasons included a desire to be helpful, curiosity, and trying to find out how much other people could tell about what they considered to be their "real" personality.

These findings suggest that a clinician cannot assume that a client is motivated by information gain as opposed to pragmatic factors when he presents himself for assessment. On the contrary, it is the responsibility of the examiner to make his views on assessment clear to enable the client to go beyond the inevitable unevenness of the testing situation which may lead to a pragmatic orien-

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tation, and understand assessment as an information-providing function.

Considerations for Further Study

The most immediate consideration for further investigation is the effect of trait-descriptive feedback on attitude. Although a trend toward increased optimism of attitude was apparent, it was not significant. However, as previously mentioned, the measure used to assess attitude-change was severely truncated and lacking in sensitivity. Further exploration of the effect of trait-descriptive feedback on attitude using a more sensitive dependent measure is required to substantiate the trend found in this study. Such a measure should attempt to control for the possibility of a social desirability response set.

Further investigation should also be made of the low scale statements of the PRF feedback library. Adequacy of precision and clarity, in particular, should be considered.

Another interesting area for investigation would be an exploration of the duration of the attitude shift caused by feedback. The present study examined attitude shift immediately after feedback had been presented. It provided no information concerning relatively long-range effects of feedback.

Summary and Conclusions

In summary, our first expectation concerning the effect of feedback on optimism was supported within the MMPI group for the attitude component of optimism. More specifically, there was a significant negative shift in attitude for the MMPI group. The PRF group demon-

strated a trend toward increased optimism, but this trend was not significant. This is probably due to the truncated nature of the dependent measure. In general, on the other hand, feedback had no effect on subject expectancy.

Our second expectation, regarding possible differential effects of trait-descriptive and pathology-based feedback was also supported for the attitude component. PRF feedback recipients had a significantly more optimistic attitude than did the MMPI feedback recipients.

The above findings carry two basic implications for the question of feedback. As regards attitude, the optimal use of feedback would require that trait-descriptive rather than pathology-based feedback be used to avoid a detrimental effect on the client's attitude. On the other hand, even pathology-based feedback has no effect on expectancy, therefore-feedback will not result in a negative self-fulfilling prophesy. In short, feedback may affect attitude, but this does not generalize to expectations concerning effective action. This data serves to refute those traditionalists who maintain that feedback is likely to be damaging to the recipient.

APPENDICES

APPENDIX A
OPTIMISM SCALE

OPTIMISM SCALE

Which of the following best describes the way you feel about yourself right now?

- 5 - Very pleased
- 4 - Somewhat pleased
- 3 - Neither pleased or displeased
- 2 - Somewhat displeased
- 1 - Very displeased

If you decided to make a change in your life right now, which of the following best describes the results you would expect?

- 5 - A complete success
- 4 - Somewhat of a success
- 3 - Neither a success or failure
- 2 - Somewhat of a failure
- 1 - Complete failure

APPENDIX B
MMPI SCALES AND ABBREVIATIONS

MMPI SCALES AND ABBREVIATIONS

Question (?)

Lie (L)

Infrequency (F)

Corrections (K)

Hypochondriasis (Hs)

Depression (D)

Hysteria (Hy)

Psychopathic Deviate (Pd)

Masculinity - Femininity (mf)

Paranoia (Pa)

Psychasthenia (Pt)

Schizophrenia (Sc)

Hypomania (Ma)

APPENDIX C
PRF SCALES AND ABBREVIATIONS

PRF SCALES AND ABBREVIATIONS

1. Achievement	Ac
2. Affiliation	Af
3. Aggression	Ag
4. Autonomy	Au
5. Dominance	Do
6. Endurance	En
7. Exhibition	Ex
8. Harmavoidance	Ha
9. Impulsivity	Im
10. Nurturance	Nu
11. Order	Or
12. Play	Pl
13. Social Recognition	Sr
14. Understanding	Un
15. Infrequency	In

• APPENDIX D
MOTIVATION QUESTIONNAIRE

MOTIVATION QUESTIONNAIRE

Please mark one of the following:

I participated in this testing project:

1. Primarily to receive extra credit in my psychology class.
2. Primarily to learn something about myself.
3. Other (please specify).

APPENDIX E
FEEDBACK LIBRARY

FEEDBACK LIBRARY

MMPI STATEMENTS

HIGH

- L. In answering the questions, this individual revealed a marked tendency to present himself in a favorable light.
- F. This individual answered a number of items in a most unusual way when compared to people in general. He may have had difficulty comprehending the items or he may have been little motivated to cooperate with the assessment procedures. Sometimes people present themselves as badly off in an effort to influence others to be helpful and caring.
- K. When answering the items, this individual tended to deny having problems, worries, or feelings of inferiority.
- 1. This person is quite worried about his/her health and probably expresses a more than average number of physical complaints. He/she may frequently use these complaints as a means to control others. She/he tends to have defeatist attitudes and is doubtful that others will give him/her the help he/she needs.
- 2. This is an unhappy and worried individual who tends to doubt that things will improve much for him/her in the future. He/she probably has a low energy level and finds it difficult to get started. He/she may be prone to backaches, headaches, and feelings of muscular tightness.
- 3. This individual does not like to explore for the personal reasons that lead to his/her difficulties. In fact, he/she

probably prefers not to think about his/her problems at all.

Others tend to view him/her as immature and self-centered.

4. Unless occupied this person quickly tends to feel bored and restless. Although he/she attempts to be friendly, he/she is easily irritated and angered. He/she probably has difficulties maintaining friendships and may feel distant and rebellious toward his/her parents. He/she had little foresight about the consequences of his/her behavior and finds it hard to understand why others respond to him/her as negatively as they do. When he/she has done something against others, he/she does not tend to feel as guilty as most people would. Instead, he/she tends to feel generally misunderstood and mistreated and to blame his/her difficulties on the generally rotten deal he/she has gotten out of life. He/she is little able to profit from experience and tends to get into the same kinds of trouble over and over and over again.
5. This individual tends to be passive and dependent upon others. He tends to share more interests with women than is typical of men. These may reflect artistic and cultural interests and sometimes a high level of educational attainment. He probably views himself as a sensitive person in the sense that he feels things more intensely than most people.
6. This individual often tends to think that others are referring to him/her in a negative way. His/her feelings are easily hurt

- and he/she often feels mistreated. He/she is quick to believe that others have it in for him/her and deliberately try to make his/her life miserable.
7. This individual tends to be excessively doubtful and to have great difficulty in making decisions. He/she is probably plagued by worrisome preoccupations and a variety of fears. He/she tends to be tense much of the time. He/she may be quite perfectionistic and, if so, overly demanding of himself/herself and others. He/she tends to respond to experiences of failure with guilt feelings.
 8. This individual is very much a loner. He/she may prefer to remain absorbed in his/her own thoughts and daydreams. He/she may even feel quite distant when he/she is with other people. He/she probably has had intense problems getting along with his/her family. Many times, things just happen so fast that he/she has a hard time keeping up, sometimes he/she just gives up and doesn't seem to care what happens to him/her.
 9. This is a restless individual who very much feels a need to be on the move. He/she doesn't like to concentrate on one activity for very long. He/she usually speaks rapidly and tends to stay awake more than most people. He/she is very optimistic about the future and is confident that his/her potential for success is great.
 10. This is a shy individual who may feel quite uneasy with groups of people. He/she probably does, or would enjoy close relation-

ships with others but is ill at ease in a group setting and tends to avoid them. He/she may be unusually sensitive to criticism and afraid to try new things in front of others.

LOW

- L. In answering the questions, this individual revealed a marked tendency to present himself in an unfavorable light.
- F. This individual tended to answer the items in the way that the vast majority of people would. He/she was able to comprehend the items and was probably motivated to pay close attention to the assessment procedures.
- K. When answering the items, this individual tended to describe himself/herself as having problems, worries, and feelings of inferiority.
- 1. He/she has indicated little worry about his/her health and probably seldom expresses physical complaints. This individual appears to be self confident and willing to assume responsibility.
- 2. This is a ~~happy~~ and relatively carefree individual who tends to look forward to the future with hopeful feelings. He/she is probably energetic and likes to get started. He/she probably finds it easy to relax and can enjoy many things and activities.
- 3. This individual wants to understand the reasons for any problems he/she may have: he/she may devote a great deal of effort to find these reasons. Other people tend to view him/her as mature and attentive of others.
- 4. This individual can tolerate long periods of inactivity before

he/she becomes bored and restless. He/she is probably patient with others and tends to maintain friendships. He/she probably has felt a close and understanding relationship with his parents. He/she tends to carefully weigh the consequences before he embarks on an endeavour and attempts to be sensitive to the impact of his/her behavior on others. He/she tends to feel very guilty, whenever his/her actions have been harmful to others. If he/she does get into trouble, he/she tries to learn from the experience and is less likely than most people to get into the same kind of trouble again.

5. This individual tends to be a dominant person. His/her hobbies and interests tend to be strongly masculine in their orientation. He/she probably prefers occupations that involve a lot of activity such as construction, hunting and the like. He/she probably views himself/herself as less sensitive than most and may take pride in being tough.
6. This individual tends to feel comfortable with the way others regard him/her. His/her feelings are seldom hurt and he/she generally believes that people treat him/her fairly. Even when he/she encounters troubles with other people he/she doubts that anybody has it in for him/her or would deliberately try to make him/her miserable.
7. This is a decisive individual who is little given to doubt. He/she is seldom plagued by worries or fears about what may happen. He/she is almost never tense. He/she is not bothered by imperfections and can readily accept faults in himself/herself and

others. He/she seldom responds to experiences of failure with guilt feelings.

8. This individual likes to be involved with others and is seldom absorbed in his/her own thoughts and daydreams. He/she tends to have close relationships with the people about him/her and usually feels a strong and affectionate bond with his/her family. In general, life does not seem too fast for him/her. Even when problems pile up he/she does not give up easily.
9. This individual prefers relaxation to being constantly on the move and may tend to sleep more than most people. His/her speed and movements tend to be somewhat slow and deliberate. He/she can concentrate on an activity for a long period of time. He/she is probably pessimistic about the future and tends to doubt that he/she will be much more successful in the future.
10. This is an outgoing individual who enjoys being with groups of people. He/she probably is involved with a number of groups and activities. He/she is willing to try new things in front of others and doesn't mind if he/she appears awkward at first. He/she seldom worries about whether others will disapprove of his/her actions.

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PRF STATEMENTS

HIGH

This person is strongly motivated by challenge and likes competition. - He (she) is eager to excell others and is willing to put forth major effort to attain distant goals.

This is a person who accepts people readily and makes efforts to win friendships and maintain associations with people. He (she) enjoys being with friends and people in general.

This is a person who enjoys combat and argument and who insists upon getting his (her) own way even at the expense of others.

He (she) is easily annoyed by others and will not tolerate affronts.

This individual enjoys being free and not tied to people, places or obligations. If faced with restraints and restrictions, he (she) will try to break away and may become rebellious.

This individual forcefully expresses his (her) opinions. He (she) enjoys influencing and directing other people and tends to assume leadership roles.

This individual does not give up easily on a problem in the face of great difficulties. He (she) is willing to work long hours and is unrelenting in his (her) ability to continue working at a task.

This individual enjoys situations in which he (she) is the centre of attention. He (she) tends to engage in behaviour which attracts

the notice of others and may try to be dramatic or witty.

This person seeks to maximize personal safety and to avoid risks of bodily harm. If he (she) regards an activity as dangerous he (she) will not enjoy it even if others find it exciting.

This individual tends to react spontaneously and without deliberation. He (she) gives vent freely to feelings and wishes and may be volatile in emotional expression.

This individual readily performs for others and assists whenever possible. He (she) gives sympathy and comfort and assumes a caring role for children and other people who may be in need.

This individual is concerned with keeping personal effects and surroundings neat and organized and is interested in developing methods for keeping materials methodically organized. He (she) dislikes clutter, confusion and lack of organization.

This individual does many things just for fun. He (she) spends a good deal of time participating in games, sports, social activities and other amusements. In social situations, he (she) enjoys jokes and funny stories and generally maintains a light-hearted, easy-going attitude toward life.

He (she) desires to be held in high esteem by acquaintances and is concerned about his (her) reputation and what other people think of him (her). He (she) strives to gain the approval and recognition of others.

This individual enjoys exploring many areas of knowledge and inquiry. He (she) values synthesis of ideas, generalizations,

and logical thought, especially if directed at satisfying intellectual curiosity.

This individual answered a greater than usual number of items which typically reflect carelessness of reading but may be indicative of confusion and problems with comprehension. The validity of interpreting the other scales is questionable.

LOW

This is a non-competitive person who is rather content with his (her) status in life and is not particularly motivated by challenges. He (she) is more interested in immediate satisfaction rather than distant goals. He (she) tends to avoid demanding situations.

He (she) is a reserved person who enjoys being alone more than being with others. He (she) is careful to establish independence and to preserve social distance. He (she) is reluctant to meet people and establish new friendships.

He (she) prefers friendly relations and discussions and tries very hard to avoid situations which may lead to arguments and disagreements. If he (she) feels that he (she) has been harmed by someone, he (she) will go to great lengths to avoid confrontations. He (she) is hesitant to express disagreements and will do so only if he (she) can do so very tactfully. He (she) defers decisions to others.

This person values the opinions of others and seeks advice before making important decisions. When difficulties arise he (she) will

readily look to others for guidance. He (she) is not fearful of obligations and values the ties which bond people together. This individual often yields to the influence and direction of others. He (she) expresses his (her) opinions very cautiously if at all and prefers the role of follower to that of leader. This person tends to give up in the face of difficulty. He (she) may often start tasks but tends to give up when faced with difficulties. He (she) has a particularly unlikely chance to succeed with those tasks which require sustained effort. This is a quiet and reserved person who prefers to let others be the centre of attention. He (she) avoids behaviour which is likely to attract attention to himself (herself) and may experience feelings of shyness.

This person enjoys adventure and is willing to take risks and expose himself (herself) to danger. On occasion he (she) may be reckless and show little regard for his (her) personal safety.

This individual is characterized by foresight and planning in most situations. He (she) is usually quite cautious and concerned about the consequences of his (her) actions. This is a person who is not easily bored and who can find stimulation in a large variety of tasks and situations. Restraint characterizes the expression of his (her) feelings to others.

This is a person who is little concerned with the feelings and problems of other people. He (she) is pre-occupied with taking

care of his (her) own welfare and feels that others should do likewise.

This individual is little concerned with maintaining order and is quite tolerant of disorganization and clutter in his (her) personal environment. He (she) is quite content to take things as they come and has little need or wish to organize his (her) surroundings methodically.

This is a serious person who wants his (her) actions to be directed to some worthwhile goal. He (she) shows little interest in purely recreational activities but derives satisfaction from work and achievement. He (she) is a person who may become quite uneasy if placed in a situation where he (she) has little to do.

This individual cares little about status and gives little attention to making a favourable impression on others. He (she) is a person who decides for himself (herself) what he wants to do and is not particularly influenced by the approval and recognition of others.

This person prefers to accept life at face value. He (she) is little give to searching for underlying meanings and explanations. He (she) is more concerned with practical knowledge which he (she) can apply than with abstract theoretical principles.

This is a person who has read the test items with greater than usual carefulness and has comprehended them well. His (her) answers have been by and large quite conventional. This is a favourable indication for the interpretation of other scales.

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