THE EFFECT OF PRAISE AND CENSURE ON THE TASK PERFORMANCE OF POOR AND GOOD PREMORBID SCHIZOPHRENIC MALES

by

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Introduction

Problem and Background

Experimental research has sought to determine the social reinforcement conditions that best facilitate the task performance of schizophrenics. The findings in this area on the role of censure and praise in modifying schizophrenic task performance are contradictory, with neither censure nor praise consistently related to increments in performance.

In the main, the research on social reinforcement has focused on laboratory tasks and has not concerned itself with reinforcement in practical settings. Since the involvement of schizophrenics in vocational rehabilitation programs has become a major treatment modality of this era, clarification of the effects of praise and censure on real work tasks that schizophrenics are being trained to perform could contribute to the understanding of some of the basic theoretical issues as well as have direct applied value. It has been shown that work plays a large part in keeping out-patients out of the hospital for long periods of time (Zolik, Tito and Levin, 1971), and in helping hospitalized patients to function again (Freeman and Simmons, 1963).

In every vocational rehabilitation setting, praise and censure are continually being administered without clear knowledge of its effects on the worker's performance.

It would seem important to ascertain the usefulness of praise and censure since no one knows definitively how to set up the training of schizophrenics so as to maximize their learning of new tasks.

A clue to resolving the contradictory reports is suggested in previous research which shows that schizophrenics with different developmental histories, as in poor and good premorbid schizophrenics react differently to praise and censure (Kantor & Herron, 1966; Higgins, 1969). Yet persons with differing developmental histories and patterns of disturbance are lumped together in work rehabilitation programs. They are treated as if they all learn in the same way despite the evidence.

It has been known since Hunt & Cofer's pioneering work (1944) that schizophrenics as a group do not respond to social reinforcement in the same way as "normals". As it became clearer that people who receive the label "schizophrenic" are quite heterogeneous, attempts were made outside of the traditional diagnostic subtypes to classify these people. One fruitful method that was devised looks to the person's developmental history and onset of the emotional disturbance (Phillips, 1953). It was out of this work that psychologists began to see that the process of learning new tasks and the ability to perform a myriad of tasks were, in part, related to the person's level of social development (Kantor & Herron, 1966). Some recent studies on task performance of schizophrenics have taken premorbid history into account as an important variable which reduces the heterogeneity

of the sample. The research to be presented here will look at the effects of praise and censure on the task performance of good and poor premorbid schizophrenics.

This study attempts to add to the line of research on the effects of social reinforcement on schizophrenic task performance in a number of ways. Firstly, it will examine the effect of praise and censure on a practical, simple vocational task. Secondly, it will investigate how the praise and censure was experienced by the S to ascertain how useful this form of social reinforcement is. Thirdly, the study will focus on a group of people who could be candidates for vocational rehabilitation, present out-patients of a state mental hospital. These people will not be lumped together but instead separated by their premorbid status.

Survey of the Literature

So far, the research in this area on social reinforcement and its effect on schizophrenic task performance has not produced consistent generalizations. There are studies that have shown that general social censure (for example, "you are wrong") with a heterogenous schizophrenic population led to a deficit in performance (Wilensky, 1952; Webb, 1955; Young, 1962; Barry, 1968), while others have shown censure led to an increment in performance (Atkinson & Robinson, 1961; Cavanaugh, Cohen & Lang, 1960; Losen, 1961; Streiner, 1969; and Reid, 1966). Some studies found that reward increases

performance (Stotsky, 1957; Peter & Jenkins, 1954; D'Alessio & Spence, 1963; and Meichenbaum, 1966), while others found reward leading to a performance decrement (Klein, Cichetti and Spohn, 1967; Brenner, 1967). Farina, Holzberg & Dies (1969) and DeLuca (1968) found no change in performance with either praise or censure.

These inconsistent results are attributed to the great variety of experimental methods, tasks, reinforcements and heterogenous schizophrenic samples that have been used in the various studies (Zimet & Fishman, 1970). This section will review the literature organized by the factors to be taken into account in order to predict the relationship between reward or censure on schizophrenic performance.

Nature of the Tasks

One of the major problems in this area of research is that the tasks used were not comparable. Many different tasks varying in complexity have been used to assess schizophrenic performance under social reinforcement conditions from simple reaction time (Cavanaugh, Cohen and Lang, 1960), to visual-motor tasks (Fischer, 1963), to paired-associate (Atkinson and Robinson, 1961), and conceptual tasks like arithmetic (Losen, 1961), proverbs (Meichenbaum, 1966) and anagrams (Farina, Holzberg and Dies, 1969). It has been found that good and poor premorbid schizophrenics differ widely in their abilities on different tasks (Kantor and

Herron, 1966; Higgins, 1969). When a study doesn't take these differences in task ability and diagnosis into account, the variability in performance may overshadow the real differences that may exist. In order to resolve this problem, Garmezy and Rodnick (1959) obtained baseline measures for each diagnostic group (good and poor) and then used change scores for each subject as the measure.

An additional problem, however, is that the nature of certain of the tasks lend themselves to learning under a specific set of reinforcement circumstances. When feedback is supplied on a simple task it can be more helpful and lead to positive change than when it is supplied on a more complex task. A simple task may only call forth a narrow range of responses so that when one response is censured it is clear what actions the S must take to improve his performance. However, on a complex task there can be a bewildering set of possible alternatives, but the censure does not give a clue as to how to change. A few examples from the literature illustrate this point. In a study by Cavanaugh, Cohen and Lang (1960), when the reaction time task (a simple task) is censured, the subject immediately knows what is wrong with his response: he is too slow. He knows then that in order to correct himself he must go faster. The results here are that censure increases performance. However, on a conceptual (complex) task, like a proverbs test (where the abstract meaning is called for), when the

subject is censured, the censure does not provide a clue as to what was wrong with his response so he cannot change and improve easily. This is the case in a study by Meichenbaum (1966) in which the subjects' abstract response to proverbs was measured and response-contingent censure led to worsened performance when the censure could not be used as information feedback.

The level of complexity of the tasks used in social reinforcement studies vary widely. Meyer and Offenbach (1962) found that the effect of reward and punishment changes as a function of the level of complexity of the task. In a study by Streiner (1969), high-complexity and low-complexity word tasks were given under response-contingent praise and censure. In the high-complexity condition, schizophrenic subjects learned faster under censure than under praise. In the simple tasks their speed of learning was independent of the reinforcement. Parenthetically, "normals" in this study performed equally well under conditions of praise and censure on both low and high-complexity tasks.

In another study which focused on the effects of praise and censure on schizophrenic performance in high and low-complexity word memory situations, Irwin and Renner (1969) found that in the low-complexity condition, poor premorbids performed better under censure while good premorbids performed better under praise. The reverse was found in the high-complexity situation in which poors did better under praise than did goods. These three studies suggest that

the level of complexity of the task must be taken into consideration when one tries to deduce generalizations about the effect of social reinforcement. In the study proposed here, a simple task will be used with only two response categories (check or no check) so that the reinforcement will provide clear feedback as to how to correct the errors in performance.

Nature of the reinforcement

Results of research in the area of social reinforcement of schizophrenic performance are not directly comparable because what has been called "reinforcement" or praise and censure has in effect entailed very different manipulations in every research setting.

1) Contingent Reinforcement. The grossest difference in methodology has been between contingent and non-contingent reinforcement conditions. In studies using contingent reinforcement, the subject is evaluated after each response which coincides with the treatment group that he is in. If he is in the praise condition, after each correct response he will be praised; if in the censure condition, he will be censured each time he is wrong. The non-contingent reinforcement method evaluates the subject without respect as to how he actually performed. One can see that the response-contingent reinforcement under certain conditions (when the task allows the subject clear feedback as to what is wrong as in reaction-time tasks - see discussion above on nature

of the task) can offer a consistent body of knowledge of results.

Some theorists hold that this kind of contingent feedback focuses the schizophrenic's attention onto the task and allows him to change his set and break up maladaptive and perseverative responses (Buss, 1966). This refers to censure feedback only. Based on this learning theory model they predict that censure administered contingently enhances the performance of schizophrenics (Buss and Lang, 1965). A number of studies do uphold this hypothesis (Losen, 1961; Cavanaugh, Cohen and Lang, 1960; Atkinson and Robinson, 1961; Lang, 1959; Streiner, 1969) but others do not. One contradictory finding was that response-contingent praise and not censure led to an increase in performance (Meichenbaum, 1966). Another study using as a task the learning of paired-words found that contingent-reward and contingent-censure disrupted learning more than non-evaluation. Contingent reward was found to be less disrupting than contingent censure, but did not facilitate performance at all (Goldman, 1965).

Neither contingent-reward nor contingent-censure are consistently related to increased learning. It is necessary to take into account the many other factors such as the le· ' of complexity of the task involved and the conditions und which it is administered.

2) Non-contingent Reinforcement. A similar case can be made for the studies which used reinforcement in a non-

contingent manner. The results of these studies seem to be more inconsistent than the others using the response-contingent methods. D'Alessio and Spence (1963) gave either non-contingent praise and encouragement or no evaluation to "chronic" and normal subjects on a speeded motor task. The global praise increased performance in all groups that received it. Reid (1966) found that both her global praise and censure conditions resulted in an increase in the number of items attempted (on the Minnesota Clerical Test) and that censure tended to facilitate performance more frequently than praise, but this trend was not statistically significant.

In direct contrast, Webb, in an early study (1955), found that schizophrenic subjects who were criticized for their initial performance on a conceptual abilities task did significantly worse after the censure, whereas control subjects improved on their second performance relative to the first. Using a similar cognitive task, Deluca (1968) found that poor premorbids regardless of receiving non-contingent praise or censure showed a significantly greater deficit in performance compared with good premorbids. In another study using good and poor premorbids, neither non-contingent praise nor censure had any effect on the performance of the tasks (reaction time and anagrams) (Farina, Holzberg and Dies, 1969).

3) Subject's Perception of the Reinforcement. In order to understand these diverse findings and to bring some order to them, it is important to give thought to how the reinforcement was taken by the subjects themselves. Out of all the literature in this area of research on social reinforcement, only one study (Reid, 1966) systematically interviewed the subjects on the matter. Reid found that the majority of subjects who were censured in her study felt that the experimenter was trying to encourage them to work harder even though the censorious statement was clearly critical of the subject's previous performance and very similar to censure statements made in other studies. In addition, the experimenter's tone of voice in this study was rated as sympathetic and encouraging by psychologists. This points out the need to determine the subject's experiences, not only the apparent situation.

A case can be made that censure can lower the self-esteem of the subject and lead to a deterioration in performance as in studies by Wilensky (1952) and Webb (1955). However, this important aspect of reinforcement has been overlooked. If censure is taken as encouragement in one experiment but as punishment in another, the studies are not comparable because the reinforcements, although both labeled "censure", are making a different impression on the subjects. When censure is used in an experiment primarily to give information feedback, (Losen, 1961;

Atkinson and Robinson, 1961; Irwin and Renner, 1969), it may not be taken as a criticism by the subject. It is more likely to be taken as explicit instructions to do better and not as the experimenter's way of undermining the subject's confidence. On its face, praise confirms the ongoing performance of the subject, without leading to a change in set to do better. However, Reid's study (1966) strongly points out that the specific qualities and implications of the stimuli one labels as praise and censure can be much different from what the researcher has in mind when designing the study. With this in mind, the proposed study will obtain each subject's experience of the reinforcement. Only with this control can it be known whether the praise or censure conditions had the intended effect or whether the reinforcements were interpreted differently.

Subject Selection

So far, this review of the literature has scrutinized the nature of the tasks and the reinforcements that have been used to investigate the effects of social reinforcement on the task performance of schizophrenic patients. Another source of the variability of results found in these studies can be traced to the vast differences in the patient populations selected for use. Some studies have used all "chronics" (Cavanaugh, Cohen and Lang, 1960; Fischer, 1963; D'Alessio and Spence, 1963) or all "acutes" (Atkinson and Robinson, 1961) or just indicated that "schizophrenics" were used (Grebel, 1971).

In another instance, Reid (1966) differentiated her sample solely on a symptom measure she developed. Male in-patients Ss were used in virtually all studies.

The Phillips Premorbid Scale as a Tool in Subject Selection

There does seem now to be a more fruitful trend to using the Phillips Premorbid Scale on male patients to reduce the heterogeneity of the patient population under scrutiny. Much research has shown that the good premorbids and the poor premorbids have different onsets of illness and different prognoses.

Although the good and poor premorbid variable appears to be a continuous and not a dichotomous measure (Garmezy, 1965), some general statements can be made about their differences. The good male premorbid schizophrenic is more apt to have a better coping ability and to search for solutions to problems. "Goods" also have more social contacts and have their first breakdown later than poors. The poor premorbid male is usually more withdrawn and apathetic with a low activity output, is unable to maintain a set and has trouble with the intrusion of task-irrelevant stimuli. Over many different tests of ability, poors and goods have been shown to attain different levels of performance (Kantor and Herron, 1966). It was Garmezy and Rodnick (1959) who showed most clearly the necessity for separating a schizophrenic sample according to premorbid status. They showed that when the data was combined on good and poor premorbid schizophrenics on a task

of judgment of size estimation, the statistical analysis resulted in a Type 1 error (the rejection of a hypothesis which is true). Garmezy and Rodnick write: "This is clearly an artifact produced by summating the widely disparate and bidirectional behaviors of the two subgroups."

Other studies which have separated their schizophrenic populations into two groups depending on their premorbid status have found some differences between good and poor premorbids in their responses to praise and censure (Meichenbaum, 1966; Irwin and Renner, 1969; Philips, 1969; and Barry, 1968). However, no clear trend has emerged as to what reinforcement is most effective with each group. There is enough evidence to warrant dividing a heterogeneous population according to premorbid status in order to reduce the variance in the sample, and this study will use this measure to divide its sample. It will assess whether this concept is a fruitful one.

Length of Hospitalization

Although the two premorbid groups can be said to be different in many ways, long-term institutionalization can have such a dulling effect that a good premorbid may behave as withdrawn and socially isolated as someone with the poorest premorbid status. Even when some studies separate the subject population into poors and goods, both groups were hospitalized for so long that differences were wiped out. Since long-term hospitalization can create withdrawal and lack of responsivity to the environment, McInnis and Ullman (1967) found that

long-term hospitalization reduced responsiveness to both negative and positive reinforcement in their study. Therefore, any research has to take length of hospitalization into consideration with respect to reinforcement and premorbid status.

However, this poses a problem. An attempt to get accurate dates of patients' repeated hospitalizations was made by this author who found the records to be incomplete. Accurate lengths of hospitalization are difficult to come by because of the current practice of patients having short, frequent stays which are not carefully recorded. As an imperfect alternative, this study will attempt to match the poors and goods on their present age and the time they have spent outside of an institution. Choosing out-patients lessens the chance of reduced responsivity to the reinforcement. In addition, the upper age limit for the study will be forty-five years old to attempt to avoid using people who have spent whole lives in hospitals and to limit the effect that age has on performance of a timed task.

Symptomatology

Another characteristic of the subject sample that requires scrutiny is the degree of overt symptomatology manifested. It seems to be expected that both diagnostic groups (goods and poors) would overlap in terms of symptomatology. In fact, a person with a good premorbid history in an acute state may have more symptoms than a person with a poor premorbid background. It would seem empirically that symptoms

interfere with a person's attempts at learning and performing a task by diverting attention away from that task. Grebel (1971) found a correlation between ward behavior ratings and performance on cognitive and reaction time tasks. It is fair to speculate that a reinforcement may not have the same effect on a person who is in extreme distress with many symptoms than on someone who has not so many symptoms regardless of premorbid history. Reid (1966), Higgins (1969), and Schwartz (1967) all found that the current severity of illness affected task performance and response to reinforcement.

In all previous studies, the subject population has been in-patients, a group most likely to be in severe emotional distress. This study will use all out-patients in order to avoid having subjects in acute states which might confound results. Out-patients are the usual population in vocational rehabilitation settings. In addition, heavy medication, which can dull responsivity and wipe out any differences between good and poor premorbids, is usual in an in-patient population. However, by using out-patients who are on much less medication, this problem can be curtailed somewhat.

Theoretical Underpinnings of Praise and Censure

The body of research on social reinforcement of schizophrenics' task performance that will be reviewed here has both grown out of and supported different theoretical viewpoints. To place the study of praise and censure in context,

it seems necessary briefly to comment upon its major theoretical underpinnings. Hunt and Cofer (1944) pointed out that in schizophrenia there is some loss of perceptual, cognitive or psychomotor capacity which they called a psychological deficit. Usually measured in terms of performance on laboratory tasks, these deficits are reported with such regularity in the literature that they would appear to be one of the more demonstrable and stable characteristics of people labeled as schizophrenic. Hunt and Cofer postulated that these deficits arose out of the extinction of responsiveness to social stimuli in the patient. Researchers then began to ask in what ways are the deficits affected by censure and praise. Most of the theorizing has centered on the effects of censure. General social censure theory (as named by Buss and Lang in 1965) proposes that etiologically schizophrenics have experienced more censure in their lives than normals have. The censure has created high levels of anxiety which is disruptive to their functioning. The theory holds that when they are confronted with censure while performing a task the censure will lead to deficits in their performance.

A variant of this theory is the specific social censure theory which looks into the life history of the schizophrenic patient to assess who was the dominant force in the patient's life: mother or father. Garmezy and Rodnick (1959), the chief proponents of this view, have reported that the

family in which the mother is dominant is associated with a poor premorbid history of the male. This applies in their theory only to males, since one, they only did research with males, and two, because the assumption is that a male child who can identify with a strong father will have a better premorbid status. The cue relevance of censure is then sex-linked so that poors are more adversely affected by censure from maternal figures and goods are more affected by censure from males. Much of the research that this theory has generated has not been reviewed here because Garmezy and Rodnick and their followers did not use praise and censure of specific tasks, but instead used stimuli depicting censurious scenes of parental dominance which were then judged perceptually. A derivative of these two theories hypothesizes that poor premorbids are more sensitive to censure (assuming they had experienced more censure than goods) and that they will try to avoid it whenever possible. Therefore, when censured on a task they should try to improve in order to avoid further censure.

Buss (1966) makes a strong criticism of the censure theory by stating that:

> "if the schizophrenic is abnormally sensitive to censure, then the presence of censure should make him so emotional that his performance is seriously disturbed. Yet the theory insists that the threat of censure can lead to improved performance. One way out of this dilemma is to assume that the schizophrenic's emotional arousal in the face of censure is intense enough to disrupt ongoing performance. Many psychologists would find it difficult to accept the plausibility of this assumption."

Interference theory is also relevant here. Interference theory assumes that every schizophrenic is beset by distracting, irrelevant external and internal cues which disrupt his ongoing performance and learning. This theory leans heavily on the concept of set and the schizophrenic's inability to maintain and to change set when necessary. Predictions are made that censure as a strong, valent reinforcement will break up a perseverative response tendency and also help to focus the schizophrenic back to the task at hand (Buss, 1966).

At this time there is not enough consistent, comparable research in this area to support a theory that could account for the existing contradictory evidence. The most parasimonious view is that praise and censure seem to affect schizophrenics' performance but that the conditions under which it happens must be specified. Further generalizations are speculative.

Summary and Statement of the Problem

This research concerns itself with the effect of verbal reinforcement (praise and censure) on the performance of poor and good premorbid schizophrenics on a vocational task. Since it is known that schizophrenics do show psychological deficits, the central idea of this study is to identify the conditions that maximize the subjects' performance.

The literature has suggested that when reinforcement can give information feedback about how the subject has performed on a simple task and when the subject can use this feedback, he does show a performance increment. This study has built into the censure and praise situations a procedure by which the subject is show what was done right (praised in the praise condition) and what was done wrong (censured in the censure condition) on a simple task. In addition, this study has designed the censure and praise conditions to approximate the usual conditions in a vocational rehabilitation center, i.e., the trainee receives some form of reinforcement after he has completed a certain number of tasks. After the completion of the task the subjects will be interviewed to assess their perceptions of the reinforcement.

Since prior research in this area of social reinforcement has produced inconsistent results, this study is in part exploratory, attempting to assess the effect of factors that have not been taken into consideration simultaneously in a single study. This includes the poor-good premorbid dimension, the subject's perception of the reinforcement,

out-patient status of the population, and the use of a simple, practical task. In addition, this study will control for other variables which previously confounded the results: the subject's age, time out of the hospital, and medication.

As an exploratory study specific questions will be asked but it is impossible to hypothesize the direction of the results. The major questions are: 1) Does premorbid status relate to baseline performance? 2) Does censure with information feedback increase, decrease, or have no effect on the task performance of good premorbid schizophrenics? Poor premorbid schizophrenics? 3) Does praise with information feedback increase, decrease, or have no effect on the task performance of good premorbid schizophrenics? Poor premorbid schizophrenics? 4) How were the reinforcement conditions experienced by the subjects?

CHAPTER II

METHODS AND PROCEDURES

Experimental Design

The major independent variables in this study were two premorbid states (good and poor) and three reinforcement conditions: praise, censure, and the control condition, non-evaluation. Thus, there were six cells in a 2 x 3 design with ten subjects in each treatment group, yielding a total of 60 subjects.

The treatment groups were equated in terms of age, education, and time out of hospital. The major dependent variables were the scores on the Minnesota Clerical Test, the pre-test number correct and the post-test number correct. In addition, a measure of the subjects' perception of the reinforcement condition has been assessed by a post-experimental interview.

Subjects

All subjects (Ss) used in the experiment were white, male out-patients at Bronx State Hospital who have been diagnosed as schizophrenic. Both the poor premorbid and good premorbid groups were out of the hospital a comparable length of time (15.3 months and 19.7 months respectively). There were no significant F_s attained for premorbid status, treatment group or interaction. The means for each cell and sum of squares are presented in Table 1A & 1B. All of the Ss

TABLE 1A

MEAN NUMBER OF MONTHS OUT OF HOSPITAL

Experimental Condition	Premorbid Status	
	Good	Poor
Praise	13.9	25.8
Censure	12.8	21.4
No Evaluation	19.1	11.2
	$\bar{x}$ for all Goods = 15.27	$\bar{x}$ for all Poors = 19.7

TABLE 1B

ANOVA SUMMARY FOR DIFFERENCES AMONG MEANS FOR NUMBER OF MONTHS OUT OF HOSPITAL

Source	df		F
Treatment	2	29.04	.1[illegible] N.S.
Premorbid Status	1	234.43	.47 N.S.
Interaction	2	102.42	.84 N.S.
Error	[illegible]	3440.15	

were between the ages of 18 and 45 at the time of testing, and all had at least a sixth grade education. No significant Fs were found for either age or education. Tables 2 and 3 present the cell means and sum of squares for these variables.

No S was retained in the sample who had a history of primary mental deficiency, alcoholism, organic brain syndrome or ECT in the last three months. A pre-experiment inspection of 20 out-patient charts showed little variation in dosages of medication among out-patients. Only Ss with less than 400 mg. of Thorazine or its equivalent as measured by the Mellaril Dosage Conversion chart (Sandoz, 1969) were included. Any Ss with obvious drug side-effects (extreme drowsiness or Parkinsonian and other extrapyramidal signs) were eliminated by the E. These controls minimized the depressive effects of the medication on performance. The staff of the out-patient departments of the hospital were requested to select out-patients who met the above criteria.

This study focused upon a sample that would be appropriate for a vocational rehabilitation project. In accord with this objective, only patients who were judged to be intact enough to cooperate in a test situation were chosen by the E. Four Ss were in an acutely disturbed state and and one with defective vision and no glasses were dropped from the study. Eight goods and nine poors refused to come in for their appointments to take part in the research.

TABLE 2A

MEAN AGE OF "PERSON"

Experimental Condition	Premorbid Status	
	Good	Poor
Praise	33.2	31.[illegible]
Censure	3[illegible].4	27.3
No Evaluation	31.9	33.3
	$\bar{x}$ for all Goods = 33.[illegible]	$\bar{x}$ for all Poors = 30.[illegible]

TABLE 2B

ANOVA SUMMARY FOR DIFFERENCES AMONG PROFILES FOR AGE

Source	df	[illegible]	[illegible]
Treatment	[illegible]	[illegible].3	.07[illegible] N.S.
Premorbid Status	1	12.9	1.98 N.S.
Interaction	2	31.5	2.42 N.S.
Error	[illegible]4	[illegible]62.3	

TABLE 3A

MEAN NUMBER OF YEARS OF EDUCATION

Experimental Condition	Premorbid Status	
	Good	Poor
Praise	13.4	12.4
Censure	13.1	11.4
No Evaluation	12.2	11.4
	$\bar{x}$ for all Goods = 13.1	$\bar{x}$ for all Poors = 11.7

TABLE 3B

ANOVA SUMMARY FOR DIFFERENCES AMONG [illegible] FOR YEARS OF EDUCATION

Source	df	[illegible]		
Treatment	2	10.03	.[illegible]	N.S.
Premorbid Status	1	[illegible].39	3.4	N.S.
Interaction		.20	.04	N.S.
Error	[illegible]	[illegible] .[illegible]		

A rating of each S's test-taking behavior was obtained by using a modified rating scale after the type used with the Standford-Benet (See Appendix A for the scale). There were no differences in test-taking behavior for treatment groups, premorbid status, nor for interaction. The cell means and sums of squares for test behavior are presented in Table 4A & 4B.

The good and poor premorbid groups had ages of onset of their first hospitalization that were significantly different (26.3 and 21.4 years respectively). The mean ages and the results of this analysis of variance are presented in Table 5A & 5B. In addition, in this study all good premorbids had once worked, whereas nine (30%) poor premorbids had never worked. A chi-square analysis yielded a significant difference. Both of these variables, age at onset and a work history, are clinical criteria used in defining premorbid status, the independent variable.

Materials

1) The Revised Phillips Premorbid Scale

The revised Phillips Premorbid Scale (Garmezy and Rodnick, 1959) was used in this study (see Appendix B for the scale). It is a rating of social-sexual history which has been used in other studies with findings that it results in a marked reduction of variability in schizophrenic performance. The ratings of premorbid adjustment were made using case history data based on Garmezy and Rodnick's revised procedures (1959). When these case record data were

TABLE 4A

MEAN RATINGS OF POST-TAKING BEHAVIOR

Experimental Condition	Premorbid Status	
	Good	Poor
Praise	2.9	2.9
Censure	2.8	2.8
No Evaluation	2.8	2.5

TABLE 4B

ANOVA SUMMARY FOR DIFFERENCE AMONG MEANS FOR RATINGS OF POST-TAKING BEHAVIOR

Source	df		F
Treatment	2	.023	1.11 N.S.
Premorbid Status	1	.015	.80 N.S.
Interaction	2	.030	.80 N.S.
Error	84	.021	

TABLE 5A

MEAN AGE OF ONSET OF FIRST HOSPITALIZATION

Experimental Condition	Premorbid Status	
	Good	Poor
Praise	24.1	21.7
Censure	23.1	19.9
No Evaluation	24.3	22.3
	$\bar{x}$ for all Goods = 24.3	$\bar{x}$ for all Poors = 21.4

TABLE 5B

ANOVA SUMMARY FOR 2 (PREMORBID STATUS) BY 3 (PRAISE, CENSURE, NO EVALUATION) FOR AGE OF ONSET OF FIRST HOSPITALIZATION

Source	df	MS	F
Treatment	2	3.0	.44 n.s.
Premorbid Status	1	35.0	7.84 $p < .01$*
Interaction	2	2.0	.23 n.s.
Error	74	4.4	

incomplete, a research assistant rated the histories during an interview with the patient or with the patient's primary therapist. Ss with scores of 12 or less were rated as good on the Phillips Premorbid Scale, and those with scores of 18 or higher were classified as poor premorbids. Eliminating all patients with scores of 13 through 17 was carried out to minimize the possibility of a reversible premorbid diagnosis. This procedure is consistent with criteria used in previous studies. Interrater reliability of the Phillips ratings was determined by having an outside judge[1] rate 20 of the case histories. These ratings were then correlated with the research assistant's[2] ratings yielding a Pearson product moment r of .92.

2) The Modified Version of The Minnesota Clerical Test

Rehabilitation workers often train their clients in clerical skills. The Minnesota Clerical Test was chosen because the test calls for skills used in general office work, filing, and in post office work (the post office is an employer of many former schizophrenic patients). As a clerical task, it is challenging and simple enough to permit direct feedback. There are only two choices to make on each item (Manual of Minnesota Clerical Test, 1959).

[1]The outside judge was an experienced M.S.W. currently working with out-patient schizophrenics in the state hospital where this study took place.

[2]The research assistant was a Ph.D. in clinical psychology currently employed in a city hospital.

This study used a variation of Reid's experimental situation with the Minnesota Clerical Test (Reid, 1966). The variation was in the introduction remarks to the S and the manner in which the reinforcement was administered (see next section, "General Procedures").

The Minnesota Clerical Test has equivalent but different forms so that a pre-test for base-line performance and a post-test for the effects of the treatment can be administered. In addition, scores are relatively free of the influence of clerical training and experience, and relatively independent of academic ability when homogeneous groups are used (Manual of Minnesota Clerical Test, 1959). The test consists of two parts: Number Checking and Name Checking. In each part, there are 200 items consisting of 100 identical pairs and 100 dissimilar pairs. The S is asked to check the identical pairs. The names in the name checking part range from 7 through 17 letters, and the numbers in number checking range from 3 through 12 digits. Separate time limits are used for the two parts - 8 minutes for number checking, and 7 minutes for name checking. The time limits for both the pre-test and the post-test were shortened as Reid (1966) had done.

Half of the subjects in each of the six cells were randomly assigned to the Form I in the pre-test and Form II in the post-test and the other half vice-versa. This was done to insure that the two forms were comparable as to

the difficulty of the task. Otherwise, the standard procedure and directions given in the Minnesota Clerical Test were used. (See Forms I and II of the Minnesota Clerical Test in Appendix C).

Scores

The first score for each of the two forms was the number of correct items attempted up to the line drawn under the last item the S had time to inspect within the time limits. The correct items were those which the "same" is checked and the "different" one is left blank.

General Procedure

The out-patients were recommended by staff and ratedon the Phillips by the research assistant. Then the research assistant made an appointment with the out-patient S for the usual time he came to the hospital to pick up his medication supply. The research assistant assigned the S to the appropriate treatment group. The E did not know which condition a S was to receive until after the administration of the pre-test. After the pre-test, the E opened an envelope prepared by the research assistant which told her which experimental instructions the S was to receive. The above procedure was intended to reduce experimental bias. However, the E was able to guess with 65% accuracy the true premorbid status of the S.

1) Task Administration

Each S was brought into the experimental room by the

E after they had introduced themselves and the E sat the S at a table across from the E. The S was then given the following instructions:

> "Mr._____, you were asked to come here today to work for a short time on a clerical job. A large number of patients are going to be asked to work on this task so that the hospital can find out how to help people work better. Before you begin, you will be told what to do and then you will be given an opportunity to practice. Be sure you understand exactly what you are to do. Now I'll read the instructions to you."

The S was then presented with the Minnesota Clerical Test, asked to write his name and the date in the appropriate spaces, and asked to read the instructions silently as the E read them out loud to him.

Instructions

> On the inside pages there are two clerical tasks. One of the tasks consists of pairs of names and the other of pairs of numbers. If the two names or the two numbers of a pair are exactly the same, make a check mark (✓) on the line between them; if they are different, make no mark on that line. When I say "Stop!" draw a line under the last pair at which you have looked.
>
> Now look at these. They are samples done correctly on pairs of numbers.

79542 _____ 79524
57943 67 ___✓___ 57943 67

These are samples done correctly of pairs of nam-s.

John C. Lindner_____John C. Lender
Investors Syndicate_____Investors Syndicate

Now try the samples below.

66273894_____66273984
527384578_____527384578
New York World_____New York World
Cargill Grain Co._____Cargil Grain Co.

Work as fast as you can without making mistakes.

After the S had completed the samples, the E inspected them and if there were any errors, the S was asked to look at the samples again and to be sure he had done them correctly. If the S could not understand or follow the directions, or if he could not correct his errors when they were pointed out to him, he was eliminated from the study.

Pre-test

The E then opened the booklet to where the S was to begin and said, "Remember you check if the two numbers (names) are the same, otherwise, make no mark on that line. Ready, begin."

At the end of exactly 3½ minutes the S was told, "Stop, and draw a line under the last one you were looking at." The E then took the booklet and turned to the page where the S was to begin and said, "Begin here and check if the two names (numbers) are the same, otherwise, make no mark on that line. Ready, begin." Again at the end of the exact time limit, the S was told, "Stop, and draw a line under the last one you were looking at." This completed the pre-test.

No evaluation was given during the pre-test.

After completing the pre-test, all Ss were told, "Let's take a short break, Mr._____. Just sit there and relax. I'll be back in a few minutes and then we'll continue." The E picked up the S's booklet and left the room to score the pre-test during the rest period. During the rest period, the E opened the envelope which told her which experimental instructions the S in the room was to receive. At the end of two minutes the E returned to the room.

Non-evaluative Condition

For this condition, Ss were verbally instructed in the following manner:

"We'll continue now, Mr. _____. We'll go through the test again." The E then will open the booklet to where the S is to begin and say, "Begin here and check if the two names (numbers) are exactly the same, otherwise, make no mark on that line. Ready, begin." The same instructions and the same time limits are used in the post-test as in the pre-test.

Praise Condition

Before beginning the post-test, Ss in the praise group were told:

> We'll continue now, Mr. _____. I have had time to look over your work. You did very well. Very, very well, in fact. I want to show you some samples of the ones you got right. (E will then point out five correct items). You are concentrating on what you are doing and working very fast.

Now we'll go through the work again.

Otherwise, Ss performing under this condition will get the identical task, instructions, and time limits as Ss in the non-evaluative condition.

Censure Condition

Before beginning the post-test, Ss in this group will be told:

> We'll continue now, Mr._____. I have had time to look over your work and you did not do well at all. You did quite badly, in fact. I want to show you some samples of the ones you got wrong. (E will then point out five incorrect items and indicate why they are wrong). You need to concentrate more on what you are doing and work faster. Now we'll go through the work again.

Otherwise, the Ss performing under this condition will be given the identical task, instructions, and time limits as Ss in the non-evaluative and the praise conditions.

Thus, the assumption is that the only difference between the experimental evaluative conditions, praise or censure, and the non-evaluative control condition is that before beginning the post-test, the two experimental groups had evaluative feedback while the Ss in the control group were told nothing about their performance. Therefore, with the assumption that other conditions are equal, significant differences in the performance of these groups on the post-test should be due to the variable type of evaluation.

2) Post-experimental Interview

After the S has completed the task, the E asked a series of questions to assess the S's experience of the experimental treatment. The questions were intended to produce open-ended responses.

1) How did you feel about this work?

2) How well did you feel you were doing on the first part of the task before your rest period? (Wait for a response first). Getting a lot wrong? Just a few wrong? Getting most of them right?

3) How well did you think you did on the second part of the task? (Wait for response). Better, worse, or just the same?

4) To praise group: How did you feel when I told you you were doing well?

5) To censure group: How did you feel when I told you you were doing badly?

6) To praise group: Did you think I was trying to encourage you to work harder? Yes; no.

7) To censure group: Did you think I was trying to encourage you to work harder or did you feel I was just being critical? Encourage, critical, neither.

All Ss were informed of the exact nature of the experiment in the debriefing session that followed the interview. It was emphasized that all Ss had done very well. The E took care to respond to and allay the individual anxieties of each S as they were elicited in the debriefing session.

CHAPTER III

RESULTS

BASELINE TASK PERFORMANCE AND PREMORBID STATUS

The first major question to be answered in whether premorbid status relates to baseline performance. A two-way analysis of variance was conducted on the pre-test scores of the Minnesota Clerical Test. Although the good premorbids had higher performance scores (the means were 83.4 for the goods and 73.7 for the poors), the statistical analysis did not reach significance. Therefore, the two premorbid groups do not differ significantly on their initial performance on the task. The means for each cell are in Table 6 and the sum of squares and F rations are presented in Table 7.

Task Performance in Relation to Treatment and Premorbid Status

A two-way analysis of variance of the post-test scores yielded no significant findings due to any of the three treatment effects (praise, censure, and no evaluation) or to the premorbid status of the Ss (good and poor), nor was there a significant interaction between the main effects. (The overall post-test means were 85.4 for the goods and 76.3 for the poors). The means for each cell are in Table 6 and the sum of squares and F ratios are presented in Table 8.

Inspection of the cell means revealed that praise increased performance when the pre-test was taken into consideration and that censure decreased performance when the

pre-tests were considered. (See Table 6 for the means). Therefore, change scores (post-scores minus pre-scores) were used in a two-way analysis of variance. The analysis of variance of the difference scores indicated that the reinforcement conditions were a significant factor in determining the results. The means for the change scores (gain or loss of each cell) are in Table 6 and the sum of squares and F ratios are presented in Table 9. A post-hoc comparison of the difference scores for the reinforcement conditions by means of the Newman-Keuls procedure (Winer, 1962) indicated that the praise condition resulted in a significantly increased performance score compared to both the censure condition ($p<.01$) and the non-evaluation condition ($p<.05$). There was a trend for the change scores of the goal premorbid group under the censure conditions to show a greater drop than the scores for the no-evaluation group, but this trend did not reach statistical significance.

Summary of the Results

When the pre-test was taken in to consideration the reinforcements (praise, censure and no-evaluation) did have an effect on performance with praise facilitating task performance significantly, censure slightly disrupting performance but not enough to produce a significant effect, and the no-evaluation not producing any change in task performance. The premorbid status of the Ss did not make any difference in their initial level of task performance or in their task

TABLE 6

Comparison of Means of Pre-test, Post-test and Gain/Loss Scores of the Minnesota Clerical Test for the Six-Subgroups

Condition		Mean Pre-test	S.D.	Mean Post-test	S.D.	Mean Gain/Loss	S.D.
Praise	Good	85.6	23.2	96.0	19.2	+10.4	20.6
	Poor	73.6	22.2	82.1	26.3	+8.5	7.7
Censure	Good	85.8	31.2	80.0	30.8	-5.8	14.0
	Poor	77.0	25.7	76.3	27.0	- .7	9.5
No Evaluation	Good	78.7	25.3	80.2	28.5	+1.5	7.5
	Poor	70.5	19.5	70.4	18.1	- .1	2.4

TABLE 7

ANOVA Summary for Differences Among Groups

for Pre-Test Scores (Baseline Performance)

on the Minnesota Clerical Test

Source	df			
Treatment	[illegible]	[illegible]	[illegible]	[illegible]
Premorbid Status	[illegible]	[illegible]	[illegible]	[illegible]
Interaction	[illegible]	[illegible]	[illegible]	[illegible]
Error	54	[illegible]		

TABLE 8

ANOVA Summary for Differences Among Groups

for Post-Test Scores on the Minnesota Clerical Test

Source	df	MS	F	
Treatment	2	210.3	1.41	n.s.
Premorbid Status	1	1251.25	1.74	n.s.
Interaction	2	263.43	.18	n.s.
Error	54	35,938.93		

TABLE 9

ANOVA Summary for Differences Among Groups

For Change Scores (Post-Test Minus Pre-Test Scores)

[illegible]

Source	df	MS	F	
Treatment	2	1489.69	5.44*	p<.01
Premorbid Status	1	4.26	.027	N.S.
Interaction	2	127.73	.504	N.S.
Error	54	3337.98		

performance as related to whether they were censured, praised, or not evaluated.

INTERVIEW DATA

The Subjects Experience of the Task as Related to Premorbid Status and Conditions

The interview was designed to tap the emotional responses of the Ss to the task and to the reinforcement condition they experienced. The interview also provided an additional source of clinical data for understanding the S's performance in the experimental condition. The results of the interview will be presented in the same order as the questions were asked. Only those results which were of a statistically significant value using Fisher's Exact Test (for the .05 level) or data which seemed to concern an important question in the study are presented here. The Tables 10 through 14 contain all the interview questions and all the frequency tabulation of responses to each question. Clinical data called from the testing situation will be presented last.

Question 1: "How did you feel about this work?"

A significantly larger number of the Ss felt negatively or neutral about the task than positive irrespective of their premorbid status or the evaluation they received.

Question 2: "How well did you feel you were doing on the first part of the task before your rest period?"

This question was designed to elicit evidence of denial since the Ss had received an evaluation of their work on the

TABLE [illegible]

[illegible] "How [illegible]"

N = [illegible]

		Positive: did well liked [illegible]	Negative: did not do well did not like [illegible]	Neutral/ [illegible]	[illegible] Response
Censure	Good	2	3	[illegible]	[illegible]
	Poor	3	[illegible]	[illegible]	[illegible]
Praise	Good	3	[illegible]	[illegible]	[illegible]
	[illegible]	3	[illegible]	[illegible]	[illegible]
[illegible]		[illegible]	[illegible]	[illegible]	[illegible]

TABLE 11

Question 2: "How well did you feel you were doing on the first part of the task before your rest period?"

N = 9

	Badly/ A lot wrong	Well / Most right	All are right
Evaluation: Good	1*		3
Evaluation: Poor	3		1
No evaluation: Good	1	3	0
No evaluation: Poor	0	1?	0

* indicates ideal of the reinforcement experience

task. Significantly, more poors than goods who were censured totally denied their negative evaluation and reported that they had performed all of the task correctly. The censured group, (N=20) irrespective of premorbid status, inappropriately reported they had gotten most right or all right on the task to a degree that reached significant statistical value (15 out of 20 who were censured answered in this way).

Question 3: "How well did you think you did on the second part of the task?"

The important findings from the responses to this question are that significantly more of those who were censured (regardless of premorbid group) felt they improved after the censure rather than having done worse or the same. The censured groups impression of their performance is contradicted by their actual task scores which did not improve. When the praise group is compared to the censured group it is found that significantly more of those praised felt they did worse or the same (13 out of 20) despite the fact that their scores significantly increased.

None of the no-evaluation group felt they did worse. This finding is almost equally distributed by premorbid group.

Question 4 and 5: "How did you feel when I told you how well you were doing?"/ (or to censured group)...that you were doing badly?"

A majority of those praised and censured responded appropriately to this question (to praise - "I felt good",

TABLE 1[illegible]

Question 3: "How well did you think you did on the second part of the task?"

N = 9

		Better	Worse	Same
Censure	Good	7	1	2
	Poor	9	0	1
Praise	Good	3	2	5
	Poor	4	2	4
No Evaluation	Good	[illegible]	0	4
	Poor	[illegible]	0	4

TABLE 13

Question 4 and 5: "How did you feel when I told you how well you were doing?" /"...how badly you were doing?"

N=40

	Felt Good	Felt Badly	Denial*	No Evaluative Feeling
Poor Censure	0	4(a)	2(b)	0
Good	0	5(a)	2(b)	3
Poor Praise	2(a)	0	3(b)	0
Good	7(a)	3(b)	1(b)	0

a=assumed appropriate response

b=assumed inappropriate response

*Denial - Ss did not believe the E was correct in either giving them praise or censure.

to censure - "I felt badly"). However, 20% of those praised and censured (equal numbers of each) refused to believe the E had told them the truth; i.e., that they had done well, or done badly.

Question 6 and 7: "Did you think I was trying to encourage you to work harder?" (add to censure group) "or did you feel I was just being critical?"

Significantly more of the censured Ss felt the E was trying to encourage them to work harder than trying to be critical of them. This was not true for the praise group. For the praise group, there were no significant differences between the feeling that they were encouraged and the feeling that the praise made no difference to them.

Clinical Results

The most striking effect took place with the poor premorbid Ss who were censured. Eight of the 10 in this group were visibly distraught after the E censured them. Six of these Ss were clearly agitated and angry with the E while the two others reacted more by appearing very saddened and worried. Six of these Ss did worse on their post-test as compared with their initial scores while the two others did better.

In the group of good premorbids who were censured, two Ss became visibly disturbed but both of these good Ss performed at the same level on the post-test as on the pre-test.

In the praise group, two Ss with poor premorbid histories became wildly grandiose to the point of becoming

TABLE 14

Question 6 and 7: "Did you think I was trying to encourage you to work harder?" (add to censure group) "or did you feel I was just being critical?"

N=40

	Encourage	Critical/No Difference
Poor Censure	6	4
Good	8	2
Poor Praise	4	6
Good	4	6

delusional after they were praised. However, both of their scores increased markedly on the post-test. One good premorbid and two poor premorbids who were praised contested the E vigorously saying they do not do well ever. These three had all done very well on the task despite their protestations.

CHAPTER IV

DISCUSSION

This study concerns itself with the effects of social reinforcements on two groups of schizophrenic patients, the good and the poor premorbid, in a task situation. There are four major questions that this research has addressed itself to, and these questions will be discussed in the light of the results of the present research.

Premorbid Status and Initial Performance on the Task

This study found no significant differences in initial performance on the clerical task for the two premorbid groups. This is a somewhat unusual finding since most of the research on poor and good premorbid schizophrenics has found that the poors do significantly worse on many different kinds of tasks and show a diminished responsiveness as compared to the goods (Kantor and Herron, 1966). The present study did find that the poors had somewhat lower scores on the initial task but the difference was not significant. One way to attempt to understand these findings is to look to the actual population that this study tested. All were out-patients who are not as regressed or as acute as in-patients. However, all of the studies which concern performance differences between poors and goods have used in-patients for their samples. Therefore, the initial selection and recruitment of the men in this study from out-patient departments assumed a higher motivational level for both

the poors and goods since these patients had to cooperate enough to appear from home for a scheduled appointment at their out-patient department. In-patients, by their role, are captive subjects, who only have to agree to be tested in their own ward setting and do not have to make any autonomouse moves out of this setting to cooperate. The out-patients used in this study are a population well-suited for a rehabilitation program. These very same qualities that make them so suitable tend to eliminate the most extreme patients making for a more homogeneous population with regard to premorbid status. For these qualities: cooperation, high motivation, non-acuteness of disturbance, reliability as to time and place may supersede their poor-good status and account for both groups' similar responses to the task itself.

Another indication that a similar level of motivation existed in the two groups who were tested was that equal numbers of poor and good out-patients refused the request to come in for their appointment to take part in the research. Therefore, this research did not find that the unmotivated group was the poors as other studies have shown (Higgins, 1966).

The trend in the last ten years has been to attempt to treat most schizophrenics on an out-patient basis as soon as their acute distress has been alleviated. Therefore, the pool of in-patients which are regularly sampled for

research contains the most chronic who cannot be placed in the community and people who are in acute states of decompensation. It is assumed that of the most chronic a large proportion are poor premorbids since they have the worst prognosis for even partial recovery. It is speculated then that previous research which has focused on performance differences between in-patient goods and poors may have sampled a larger proportion of the more unresponsive and regressed poors who have not been able to leave the hospital. In this study, most poors and goods had been out of the hospital more than a year. It is a possibility that task performance differences between in-patient goods and poors are partially attributed to this situation since the most chronic institutionalized poor premorbids are expected to perform at very low levels and with poor motivation. Since the present study had as its aim to examine differences between poors and goods who could be potential candidates for a vocational rehabilitation program, it is an interesting finding that using these sampling procedures which assume a high level of motivation that the two groups perform at an almost equal level on the task. The two groups responded similarly after the reinforcement, too, so that it is assumed that the same homogeneity factors were operating throughout the testing situation.

Since both the poors and the goods started out with comparable initial performances, this study did not have to deal

with the problem of a ceiling effect which other studies in this area have run into. That is, if one group such as the poors start out with lower scores than the goods, then the poors have a greater chance to improve with the reinforcement since they started nowhere near the limit of their performance. It is possible that previous research has found spurious differences between the two groups because the goods cannot show as much change as the poors because they start out at a higher level, near the ceiling of their performance. In consistent results which have been reported so regularly may be partially accounted for by this ceiling effect.

The Effects of Praise on the Task Performance of Poor and Good Premorbid Schizophrenics

Praise, with information feedback, resulted in significantly increased task performance scores for both the good and poor premorbid schizophrenic groups. The issue of obtaining similar task performance from both the good and poor groups has been discussed in the previous section and will not be repeated here. Although this finding that praise facilitates task performance is supported by some studies there are so many other inconsistent results in this area that there are no easy explanations for the present findings (Higgins, 1969; Kantor and Herron, 1966).

It seems more prudent to stay with the particular situation of this study to try to analyze the role of praise

as a facilitator of task performance. The major issue is that what is considered praise in one study is quite different from the praise condition in any other study. Therefore, the research in this area is difficult to compare meaningfully inasmuch as the degree of similarity of the praise conditions across studies is not readily ascertained.

The present study is unique in that the praise as administered and conceived was just as important as the censure. There is a tone in other studies where both censure and praise are the major variables that the praise was just tagged on to get balance but that the effects of censure was what the researcher was most interested in.

In this study the E noted in her diary of testing experiences that she really enjoyed praising the out-patients for their work. She felt that her praise was enthusiastic and stronger than in other studies where the praise consisted of the E saying "Right" or "Good." A review of the literature found no other studies where the praise was as elaborate or took so much time with the patients as to show them examples of their good work as was done in this study.

It may be that it was the intensity and quality of the praise as administered here that could account for the finding that praise facilitated performance for both the good and poor schizophrenic out-patients.

Looking at the demand characteristics of this study and the content of the task situation it became clear that all the men went through a failure experience since no patient

was able to finish the task in the time allotted. The time was purposely shortened to avoid a ceiling effect but avoiding this pitfall created another: the unexpected "failure effect." This came to light after the E met a number of patients who were praised who asked how they had done weeks after they were tested. Each one remarked that not finishing the task made them think they had not done well enough until the E praised them for their performance. The praised group first experienced failure on their initial performance until the failure was reversed (for some, at least) by the E's reinforcement intervention. It may be that their learning that their performance was not as bad as they had judged for themselves but instead was well-thought of was more motivating than hearing praise when one has not experienced failure.

There is so much more to know about the analysis of a positive social reinforcer. What this research does point to is that one social reinforcement in a specific situation cannot be easily compared to another. It cannot be known for example whether praise as administered here would facilitate performance on a simpler or a more complex task. The findings in this area are still too inconsistent to warrant generalizations.

The Effects of Censure on the Task Performance of Poor and Good Premorbid Schizophrenics

The censure, with information feedback, did not produce any significant change in actual test scores for either the

poor or good premorbid group. Buss and Lang's (1965) theoretical view is that contingent censure enhances schizophrenic performance by breaking up maladaptive responses if the contingent censure gives clear enough feedback to the S as how to change his response. This theoretical view, although not supported here, has not really been challenged. It was only after this study began that it became evident that the feedback as given did not provide clear enough ways to correct errors in performance on the Minnesota Clerical Test. It was too complex a change involving many different alternatives:

A censured patient in this study could:

1) speed up and do more giving himself a greater chance to get more correct (four goods and five poors did do this);
2) he could slow down and try to be more careful (four goods and four poors attempted less items);
3) keep the same rate but concentrate more (two goods and one poor attempted the same number of items after censure);
4) make up a better scanning and checking technique (this could not be judged from the existing data).

The praise group which received approximately the same feedback on how to continue to do well (be accurate, concentrate, and work fast) chose to work faster and to attempt

more items which raised their scores. It is not clear why the censured groups did not do the same. Perhaps, there were just too many messages for them to encode (work fast; concentrate; be accurate) at the same time that their confidence was undermined by the censure. Since the feedback did not provide one clear change for the men to make, it was the censure alone, and not the feedback which became the most important factor in the performance situation so that Buss and Lang's theory was not tested out. In addition, in other studies where mild censure was contingent on each and every wrong response , both poor and good premorbids improved their performance (Losen, 1961 and Cavanaugh, Cohen and Lang, 1960). The present research, in trying to approximate a real work situation, gave the censure feedback after 3½ minutes of work during which time many wrong responses were made. Therefore, the censure here was not fully contingent upon each wrong response and did not meet Buss and Lang's criteria for the conditions under which censure enhances performance.

Censure, alone, without information as to how to perform better, is frustrating and has led to performance decrement in other studies over a wide range of tasks (Wilensky, 1952 and Kantor and Herron, 1966). In the present study, it neither facilitated nor disrupted actual task performance for either the goods or the poors. One reason may be that the censure was relatively mild since it was coupled with instructions on how to do better. The censurious condition

was originally conceived to facilitate performance so that it was not meant to be harsh or overly critical. The E who administered the censure felt that her manner was matter-of-fact and that the censure was designed to be helpful in working on the second part of the task. The E kept a notebook of her feelings about testing each man. Most striking was the fact that she noted feeling quite uncomfortable giving censure to men who either looked dilapidated or depressed (approximately equal number of poor and goods) but not to the men whom she felt were very uninvolved, distant or manipulative. She thought that the censure may have come across as lighter in those situations where she felt most sorry for the patient. Also when she knew that a patient had only five wrong but had to be censured she felt reluctant to administer the censure. The notes the E compiled showed the great variability in personal responses to the subject population. At some levels this variability has to translate itself into effecting the patient's performance. It is difficult to prescribe a solution to this problem but demand characteristics of each study must be kept in mind in order to limit its effect.

The Effect of Censure and Praise on Interview Data: How the Patients Viewed the Reinforcement

The interview data provided a more fertile field than the test scores to explore some of the more subtle effects of the praise and censure on the poor and good premorbids.

A problem with the interview data is that the patients may have responded less candidly because the interviewer was the agent of the reinforcement and also of the hospital.

The interview threw into more obvious relief an important difference between the good and poor groups. That is, the censured poor premorbid seemed to try to defend against the effects of the censure more than the good premorbid group. Fully half of the poors denied error and responded that they felt they got all of the task right and that the censure had no effect on them. The blandness of these patients' responses to the interview following their obvious distress over the censure suggested that they were using denial and distorting their previous experience. This finding is consistent with theory which designates the poor premorbid as a more severely disturbed group. As the more seriously impaired group, it is expected that they would more openly resort to more primitive defenses such as denial and externalization of blame when anxious.

The profile of responses to the interview of the entire group that was censured appears somewhat different than the one of the group that was praised. Most of the men who were censured, regardless of premorbid status, reported that they did better on the post-test (when they in fact had not) and that the censure had helped them. After a painful experience, people want to think that they gained from having gone through the pain. Here the men rationalized the censure

(as being helpful) and distorted the judgment of their performance in order to justify to themselves that it was worthwhile. This is different from situations of cognitive dissonance where people have to justify to others that what they went through was worthwhile.

In direct contrast to the censured group, most of the patients who were praised reported that the praise made no difference to them, that they had not done well enough, and that they did worse or did not improve after the praise. It is difficult to make these people feel good. These men could not accept the praise regardless of whether they had a poor or a good premorbid history. This finding does not only seem particularly true for a schizophrenic sample. Horney (1950) talks about this as a cultural conflict since people are urged on to achieve but then are not allowed to brag. However, to be excessively modest is self-defeating. People are caught in a double-bind. For the group in this study, although they dismissed the praise verbally, the praise did significantly facilitate their actual task performance.

The Effect of Censure and Praise on Overt Behavior

Significantly more of the poor premorbids became visibly upset after they were censured. A flavor of the censured poor premorbids' responses come from the E's notes:

Mr. M.: "You must be wrong. I had to do better."
Mr. F.: "You crucified me." (After this statement he became quite delusional).

Mr. H.: He denies that the E is showing him the same sheet he worked on.
Mr. B.: He starts an argument over the time limit of the task and blames E for his errors.

Here, again, as in the interview data the defenses that the poors resort to are the most primitive which distort reality the most. Although the censure produced so much observable behavioral upset, it did not disrupt actual task performance. Rather, the censured group performed at the same level as before their reinforcement. A surprising finding was that the censure did provoke such a great amount of denial and anxiety since it was thought to be mild. This study does add some slight support to the specific social censure theory (Garmezy and Rodnick, 1958) which contends that poor premorbids are more upset by female censure due to the more pathological relationship they have with their mothers. This was only borne out in the clinical and interview data since task scores were not disrupted. Since there was not a male E to counterbalance the effects of sex, it is impossible to conclude that it was the female censure that was a particular factor in the results. It would be desirable in a future study to investigate the effects of using a male and female E who provide the censure experience.

In addition, it was only in the poor premorbid group that after praise a patient became extremely upset. Although only four praised premorbid men responded in this way, it was quite striking. One of these men began to yell about

a book he was sure to publish, while another began to ramble about his great prowess as a worker. There were two other praised poor premorbids who acted as if they could not bear to hear the praise by fighting the E. It was as if the praise did not concur with their self-concept at all so that its effect was quite jarring and caused an immediate disequilibrium. It must be borne in mind though, that although upset after the praise, these poor premorbid men did do better on the task. The idea can be raised that even when praise is given to a person who is in great conflict over receiving it, the praise can still facilitate performance. The praise did not seem to generate this conflict (at least overtly) in the good premorbid group. Almost any evaluation, praise or censure, has a disorganizing effect on the poor premorbid group.

The Poor-Good Premorbid Concept

This study adds evidence to the value of the poor-good premorbid concept and in a limited way to the view that poors and goods respond differentially to praise and censure. Actual task performance scores on the Minnesota Clerical Test did not show differences for the good and poor groups, whereas, in other studies, tasks did show differences for these two groups (Kantor and Herron, 1966, and Higgins, 1969). Instead, it was the clinical observational data and the interview which set these two groups apart. Although the good premorbids appear more intact, their performance (speed and accuracy) on the task here was similar to the poors.

The poor-good distinction was somewhat substantiated in another way by the E's experience with the patients. The E could judge whether a patient had a poor or good premorbid history by the patient's speech, appearance, and behavior during the testing situation in two out of three cases. The notes the E took seemed to use as criteria the social address of the person. For example, the E wrote that the poors seemed more messy and unkept looking, seemed immature and childish, and made quite bizarre comments (for example, "I have the only true record of the Vietnam war and I am going to write it to Nixon.") during the interview while the good premorbids appeared as a group to look and to sound more like what passes for "normal" in our society. They don't give away their schizophrenic diagnosis as readily as the poors do. Whereas the Phillips Premorbid Scale uses levels of psychosexual development, in terms of the extent of the patients relations with people outside of the family unit, the group can obviously be differentiated on other behavioral criteria.

Debriefing of the Subjects

All the Ss were debriefed by the E by honestly telling them about the real purposes of the research and how they were chosen to be praised or censured or not evaluated. They were all told that they had done very well. The E spent as much time as seemed necessary to relieve the Ss who were upset during the testing.

The E spent more time with the censured patients and frankly went over the rationale of the research in using the censure with them. This honest approach seems to be the only respectful way to treat people who have volunteered themselves as subjects. The men seemed genuinely interested in learning about the study and why the E could not be totally frank about its purposes during the task administration. When the E offered to send the men a summary of the results of the study, practically all of them said they wanted it. A copy of the letter to the patients is in the appendix. The ethical code calls for minimizing the secrecy that surrounds all phases of psychology since it only keeps people ignorant of information which can be always potentially useful. Furthermore, by informing the people who are making the research possible of its nature and not keeping them as dumb as guinea pigs enlists them in the research process. Many helpful suggestions and ideas were contributed by the patients who were tested and have found their way into this discussion section.

Subjects' Involvement in the Task

An interesting sidelight to this study was that every S without exception got engaged in the simple task which surprised the E who feared the task might be too boring. Even patients with a higher education showed an eagerness to do the task and a keen interest in how they had fared. Many men asked the E for vocational rehabilitation referrals and were

directed to the appropriate worker who could help them initiate this venture.

Implications for Future Research

This research has raised a number of issues concerning the role of social reinforcement in a task situation with poor and good premorbid schizophrenics. It seems logical to extend the research into a real work situation in a rehabilitation center where performance can be measured under praise, censure, and no evaluation conditions. The effect of contingent vs. non-contingent evaluation in a real work situation could be assessed to see if the two groups respond differentially. In most real work situations, evaluation is given after a series of tasks are done. It would be important to see if the poor or good schizophrenics are able to improve more if reinforcement is given after every single piece of work is done. This present study raised the problem of an unexpected failure effect taking place because of the time limit placed on the task. In future research, it would be important to allow a person to finish the task and to count how much time they took as a variable.

The effect of male and female evaluation in a vocational rehabilitation center is another area which deserves further study. Since it is clear that any evaluation can be upsetting to schizophrenics, it seems important to assess whether the sex of the agent of the reinforcement contributes to the patient's disturbed response.

APPENDIX A

BEHAVIOR RATING SCALE

0	1	2	3
Very Poor	Poor	Fair	Good
Very poor compliance, partially testable	Minimal compliance with instructions	Fair compliance	Complete compliance with instructions

APPENDIX B

The Phillips Scale of Premorbid Adjustment in Schizophrenia

(Modified with descriptive criteria by Parina and Garmezy for use with male and female patients)

I. Premorbid History

A. Recent Sexual Adjustment

(Note: Score as sexual contact; when information is not explicitly given, use inference to get at this actual sexual behavior).

1. Stable heterosexual relation and marriage..... 0
2. Continued heterosexual relation and marriage but unable to establish home..... 1
3. Continued heterosexual relation and marriage broken by permanent separation..... 2
4. (a) Continued heterosexual relation and marriage but with low sexual drive..... 3

(Note: If only informant is mother, don't score sexual adjustment. Prorate from rest of Premorbid History section. Look here for evidences of frigidity, distaste, avoidance, infrequency. Don't score on matters of technique.)

(b) Continued heterosexual relation with deep emotional meaning but emotionally unable to develop it into marriage..... 3

(Note: This must involve actual physical contact. Petting behavior is acceptable here. Mutuality of feeling is not necessary, but sexual behavior is, i.e., no adoration from afar).

5. (a) Casual but continued heterosexual relations, i.e., "affairs" but nothing more..... 4

(Note: "Casual" here implies lack of emotional meaning, although sexual behavior is consistent and regular).

(b) Homosexual contacts with lack of or chronic failure in heterosexual experiences..... 4

6. (a) Occasional casual heterosexual or homosexual experiences with no deep emotional bond..... 5

(Note: This differs from 5(a) on the dimension of frequency. Contacts less often here).

(b) Solitary maturbation with no active attempt at homosexual or heterosexual experiences..... 5

7. No sexual interest in either men or women..... 6

B. Social Aspects of Sexual Life During Adolescence and Immediately Beyond

1. Always showed a healthy interest in the opposite sex - with a "steady" during adolescence..... 0

(Note: "Steady" implies the exclusiveness of the dating relationship (neither partner dates anyone else) as well as frequency and emotional attachment).

2. Started dating regularly in adolescence..... 1

(Note: This implies twosomeness, pairing off into couples, as distinguished from 3, below).

3. Always mixed closely with boys and girls..... 2

(Note: This involved a membership in a "crowd" - interest in and attachment to others, but without the initiative factor for males, the selection factor for females).

4. Consistent deep interest in same sex attachments with restricted or no interest in opposite sex..... 3

5. (a) Casual same sex attachments with inadequate attempts at adjustment to going out with opposite sex..... 4

(Note: This differs from 4 on the basis of the consistency and meaningfulness of the same sex attachment).

(b) Casual contacts with boys and girls..... 4

(Note: This differs from 3 in that the person was not a regular member of a crowd and just associated with others on occasion).

6. (a) Casual contacts with same sex, with lack of interest in the opposite sex..... 5

(b) Occasional contacts with opposite sex..... 5

7. No desire to be with boys and girls; never went out with opposite sex..... 6

C. Social Aspects of Recent Sexual Life - 30 Years of Age and Above

1. Married and has children, living as a family unit... 0

2. Married and has children but unable to establish or to maintain a family home..... 1

3. Has been married and had children but permanently separated..... 2

4. (a) Married, but considerable marital discord..... 3

   (b) Single - has had engagement or deep heterosexual relationship but was emotionally unable to carry it through to marriage..... 3

5. Single, with short engagements or relationships with the opposite sex which do not appear to have had much emotional depth for both partners, i.e., affairs.... 4

6. (a) Single, has dated some, but without other indications of a continuous interest in the opposite sex..... 5

   (Note: Implication here is that person has dates every once in a while but that this behavior is not habitual - doesn't play an important part of his/her life (take-or-leave attitude).

   (b) Single, consistent deep interest in sex attachments, no interest in opposite sex..... 5

7. (a) Single, occasional same sex contacts, no interest in opposite sex..... 6

   (b) Single, interested in neither men nor women.... 6

C. (continued) Social Aspects of Recent Sexual Life - Below 30 Years of Age

1. Married, living as family unit, with or without children..... 0

2. (a) Married, with or without children, but unable to establish or to maintain a family home..... 1

(b) Single, but engaged or in a deep heterosexual relationship (presumably leading toward marriage..... 1

3. Single, has had engagement or deep heterosexual relationship but has been emotionally unable to carry it through to marriage..... 2

4. Single, consistent deep interest in attachments to persons of either sex..... 3

(Note: This implies an habitual interest in object relations, a consistent desire for human intimacy, but has never settled into a meaningful, continued relationship with one partner in particular).

5. Single, casual relationships with persons of either sex..... 4

(Note: Has dated more often than implied by 6 below, less often than implied by 4 above. Differentiate on the basis of frequency, regularity or social-sexual activity).

6. Single, has dated a few persons casually, but without other indications of a continuous interest in object relationships..... 5

(Note: Dating here the exception rather than the rule. Person has had occasional social-sexual contact, but doesn't actively seek out other persons. This behavior not consistent, nor an important part of his life. His contacts have been solely casual, i.e., with prostitutes to satisfy sex drive; no warmth or capacity to establish human relationships).

7. (a) Single, never interested in or never associated with either men or women; asocial..... 6

(b) Antisocial; destructive, belligerent acting out against others..... 6

D. Personal Relations: History

(Note: Score here is determined by the time of life at which person withdraws, narrows his range of social contacts. The earlier this occurs, the higher the score will be).

1. Always has been a leader, and has always had many close friends..... 0

(Note: Score for "closeness" if record states close friends, or describes frequent contact, shared activity).

2. Always has had a number of close friends but did not habitually play a leading role..... 1

(Note: From childhood until breakdown, person had extensive social contacts).

3. (a) From adolescence on had a few close friends.... 3

(Note: This may involve a drop in the number

of close friends after adolescence, but person had retained relationships involving mutual give-and-take with several people through this period).

(b) From adolescence on had a few casual friends.... 3

(Note: Person maintains relationships with several persons, even though these relationships may lack real emotional depth. Throughout life he has kept up contact with others).

4. From adolescence on stopped having friends..... 4

(Note: Cultivated human relationships during hood, but has withdrawn since puberty).

5. (a) No intimate friends after childhood..... 5

(Note: Withdrawal began earlier - before puberty).

(b) Casual, but never any deep, intimate, mutual friendships..... 5

(Note: Implies no close friends, even during childhood, but did maintain contacts on a superficial level, as distinguished from 6 below).

6. Never worried about boys or girls; no desire to be with boys and girls..... 6

E. Recent Adjustment in Personal Relations

(Note: Score here the period prior to the noticeable change in behavior which preceded symptoms and hospitalization. Any changes noted within 6 months to a year prior to hospitalization will constitute a "change" by this definition. Score period prior to these changes.

1. Habitually mixed with others, was usually a leader.. 0
   (Note: Again, this involves extensive social contacts).
2. Habitually mixed with others, but not a leader..... 1
3. Mixed only with a close friend or group of
   friends..... 3
   (Note: Distinguished from 4 below on the basis of
   consistency and frequency of contacts).
4. No close friends or very few friends or had friends
   but never quite accepted by them..... 4
5. Quiet or aloof or seclusive or preferred to be
   by self..... 5
6. Antisocial, actively avoided contact, acted out
   against others..... 6

Appendix C: Minnesota Clerical Test

Form 1

✓ Check if the two numbers are the same

1.	[illegible]	[illegible]	51.	[illegible]	5820
2.	[illegible]	[illegible]	52.	[illegible]	192836472829
3.	[illegible]	[illegible]	53.	562	562
4.	[illegible]	101367	54.	[illegible]	2639276837
5.	[illegible]	[illegible]	55.	[illegible]	75829
6.	[illegible]	[illegible]	56.	[illegible]	827391028 37
7.	[illegible]	[illegible]	57.	[illegible]	[illegible]
8.	[illegible]	[illegible]	58.	[illegible]	[illegible]
9.	[illegible]	[illegible]	59.	[illegible]	[illegible]
10.	[illegible]	[illegible]	60.	[illegible]	[illegible]
11.	[illegible]	[illegible]	61.	[illegible]	[illegible]

Appendix C

[illegible]ix [illegible] — Form [illegible] Part 1

[illegible]	[illegible]	[illegible]	[illegible]	A[illegible] Colvert & Co.
[illegible]	[illegible]	[illegible]	[illegible] & Bro	[illegible] & Bro
[illegible]	[illegible] & Co	[illegible]	W[illegible] W. B	W[illegible] W. B
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible] Inc
[illegible]	[illegible]	[illegible]	[illegible]	[illegible] Company

APPENDIX D

Letter to Ss

Dear Mr. _____,

I had wanted to let you know the results of the study you took part in. As you may remember, I was trying to find out how to help people work better. I found, with your help, that when a person is praised for his work, and shown examples of what he has done right, that he does better than when he is criticized and shown examples of what he has done wrong or when no response to his work is given.

I would like to thank you again for your help.

Sincerely yours,

Susan Flinn

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