

EMPIRICAL STUDIES OF THE PSYCHOANALYTIC PROCESS

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A number of quantitative, empirical studies of the psychoanalytic process have been carried out to test a theory of the mind, psychopathology, and therapy based on concepts derived from Freud's ego psychology. The theory we tested assumes that the patient suffers from unconscious pathogenic beliefs that hinder the pursuit of certain important goals, and that in therapy the patient works in accordance with an unconscious plan to disprove these beliefs by testing them with the therapist. The patient controls his repressions unconsciously, lifting them when he decides unconsciously that he may safely do so.

Our research supports the hypotheses that the patient tests his pathogenic beliefs throughout therapy, that he is more insightful immediately after the therapist passes a test or offers him an interpretation helpful in disproving the beliefs, and that he benefits over the long term from interpretations that he may use to carry out his plan. It also supports the hypotheses that the patient works in accordance with an unconscious plan and that he exerts control over his repressions.

The research indicates that, in analysis, the patient sets the agenda and benefits from corrective emotional experiences provided him when the therapist passes his tests. Finally, the research supports the idea that the psychoanalytic theory of the mind and therapy may be fruitfully studied by empirical, quantitative methods.

THE EMPirical STUDIES REPORTED HERE WERE DESIGNED TO test a particular theory of the mind, psychopathology, and therapy. This theory, as discussed below, is based on concepts that Freud evolved piecemeal in his late work as part of his

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ego psychology. It assumes unconscious cognition, unconscious control, and an unconscious wish for mastery. In assuming these things the present theory contrasts sharply with the theory presented by Freud in the *Papers on Technique*, for Freud's 1911–1915 theory assumes neither unconscious thought, unconscious control, nor an unconscious wish for mastery. In testing the present theory, we tested a theory derived from Freud's late works against the 1911–1915 theory.

The testing of the present theory was carried out over a period of many years by the Mt. Zion Psychotherapy Research Group, which I co-direct with Harold Sampson. The development of the theory was greatly helped by the research findings of the group. In testing the present theory against the theory of the *Papers on Technique*, we first located those areas in which the two theories make different testable predictions. We then carried out studies to determine which set of predictions fit better with our findings.

The Theory

Unconscious Mental Functioning

Our most general hypothesis assumes that a patient unconsciously performs many of the same kinds of functions he performs consciously. He unconsciously thinks, assesses reality, makes decisions, and carries out plans. Moreover, he exerts control over his unconscious mental life in accordance with these decisions and plans. He unconsciously regulates his repressions by the criteria of danger and safety, maintaining the repression of a particular mental content for as long as he unconsciously assumes that he would endanger himself if he experienced it. He brings forth the content when he unconsciously decides that he may safely experience it.

Psychopathology

A person's psychopathology stems from maladaptive beliefs about himself and his interpersonal world. These beliefs may

be unconscious. They are usually acquired in early childhood by inference from traumatic experiences with parents and siblings. They are concerned with both reality and morality. Since they give rise to psychopathology, they may be called "pathogenic." They are maladaptive in that they warn the person guided by them that if he attempts to reach certain normal and desirable goals, he will put himself in danger. He may experience this danger as internal or external. He may expect to develop severe guilt, shame, fear, or self-torment, or he may expect to hurt someone he loves or be hurt by him. Here are some examples of pathogenic beliefs: "I do not deserve to be happy," or "If I am assertive I will hurt others or be rejected by them," or "If I become sexually excited I will be punished."

The Analytic Process

The analytic process is a process by which the patient works with the analyst to disprove his pathogenic beliefs. He suffers from his pathogenic beliefs and so is highly motivated unconsciously to disprove them. He works throughout analysis by testing his pathogenic beliefs with the analyst: he carries out trial actions and observes the analyst to determine whether the analyst behaves as the beliefs predict or whether, as the patient hopes, the analyst does not do so. Also, he works, by making use of the analyst's interpretations, to become aware that he is guided by certain beliefs that are false and maladaptive.

After the patient experiences the analyst as passing a test or offering an interpretation he can use in his struggle to disprove his pathogenic beliefs, he may take a small step toward disconfirming these beliefs. He may feel relieved, less anxious, and more secure. Moreover, since he maintains his repressions in obedience to his pathogenic beliefs, he may react to the analyst's passing one of his tests or to his offering him a helpful interpretation by becoming slightly more insightful, less inhibited, and less defensive.

The patient in therapy unconsciously develops a simple plan that tells him which problems to tackle first and which to defer. In making this plan the patient is concerned with avoiding danger. For example, a patient at the beginning of therapy felt threatened by the belief that he must comply with others lest he hurt them. Therefore, during the first phase of therapy, he planned to work by testing the analyst, to disprove the belief that unless he complied with the analyst he would hurt him.

Relation of the Theory We Tested to the 1911–1915 Theory and to Ego Psychology

The theory we tested differs considerably from the 1911–1915 theory, for the latter assumes neither an unconscious wish for mastery, nor unconscious cognition, nor unconscious control. According to the 1911–1915 theory, which is based largely on Freud's (1900) early theory of the mind, the unconscious mind consists of psychic forces, namely impulses and defenses, that are regulated "automatically" by the pleasure principle, without regard for thoughts, plans or beliefs. The impulses seek gratification and the defenses oppose their coming forth. From the dynamic interactions of the impulses and the defenses are derived almost all of the phenomena of psychic life (Freud, 1926, pp. 225–226). The patient in therapy, rather than wishing unconsciously to solve his problems, is highly motivated unconsciously to resist treatment so as to retain the infantile gratifications he obtains in his symptoms.

The 1911–1915 theory, with its assumption of unconscious automatic regulation by the pleasure principle, may be thought of as based on the "automatic functioning hypothesis" (AFH). The concepts of Freud's late work, from which the present theory is derived, assume the unconscious use of higher mental functions, and so may be thought of as based on the "higher mental functioning hypothesis" (HMFH). Concepts based on the HMFH are contained in scattered passages throughout

Freud's late works. For example, in the *Outline* (1940a) Freud indicated that a person unconsciously controls his repressions by the criteria of safety and danger.¹ A person maintains the repression of a particular unconscious mental content as long as he unconsciously assumes that his experiencing it would endanger him, and he brings it forth when he unconsciously decides that he may safely experience it. In deciding whether he may safely carry out an unconscious plan of action, he relies on memories of previous attempts to carry out such a plan, and he conducts "trial actions," that is, tests of the environment.

In certain passages in his late writings Freud postulated that a person has a strong unconscious wish for mastery (1920, pp. 32, 35; 1926, p. 107). Also, he assumed that the patient in analysis works with the analyst to master his problems (1937, p. 235). In the *Outline* Freud (1940a, pp. 146, 199) described the wish for mastery in terms of the ego's task of self-preservation. In carrying out this task the ego strives for control over the demands of the instincts.

In addition, Freud assumed that a patient may suffer from a particular pathogenic belief, e.g., the belief in castration as a punishment. He wrote repeatedly that the fear of castration arises from a belief, as opposed to a fantasy, and that the patient acquires this belief in childhood by normal processes of inference from experience (1940a, p. 190; 1940b, p. 277).

The Research

In carrying out their research studies, the Mt. Zion group uses as data the transcripts of entire analyses and of psychotherapies

¹Freud (1940a) wrote of the ego: "its constructive function consists of interpolating, between the demand made by an instinct and the action that satisfies it, the activity of thought which, after taking its bearings in the present and assessing earlier experiences, endeavours by means of experimental actions to calculate the consequences of the course of action proposed. In this way the ego comes to a decision on whether the attempt to obtain satisfaction is to be carried out or postponed or whether it may be necessary for the demand by the instinct to be suppressed altogether as being dangerous. (Here we have the *reality principle*.) Just as the id is directed exclusively to obtaining

that have been audiotaped for research purposes. Our investigators use rating scales to measure a variety of phenomena about both patient and analyst. They use blind judgments to prevent their raters from being biased by expectations, and they use statistics to determine the reliability of measures, to quantify the relations among variables, and to assess the significance of their findings.

Testing the Automatic Functioning Hypothesis Against the Higher Mental Functioning Hypothesis

Few analysts today assume that unconscious mental life is regulated exclusively either automatically or by higher mental functions. Most analysts assume both kinds of regulation. Nonetheless, research studies of the relative explanatory power of the hypotheses are important. This is because the AFH still exerts a powerful, perhaps predominant, influence on psychoanalytic thinking. The perusal of a group of current psychoanalytic journals makes clear that the HMFH is seldom invoked explicitly. Indeed, only a small number of psychoanalytic writers make regular explicit use in their clinical discussions of such concepts as unconscious thought, belief, plan, or goal. In addition, a test of the AFH against the HMFH dramatizes and emphasizes the explanatory power of the HMFH.

Among analysts who do assume unconscious use of higher mental functions are Horowitz (1991) with his concept of unconscious schemas concerning role relationships, and Luborsky (1988) who assumes that the patient works in therapy to master his core conflictual relationships. In addition, Dahl et al. (1980, 1988) have developed a decision theory of emotion.

In testing the AFH against the HMFH we studied certain events that occur regularly in an analysis to determine which hypothesis explains these events better. We used as our data the transcripts of the first 100 sessions of the analysis of Mrs. C.,

pleasure, so the ego is governed by considerations of safety. The ego has set itself the task of self-preservation, which the id appears to neglect" (p. 199).

whose analysis had been recorded and transcribed for research purposes.

Spontaneous Emergence of Previously Repressed Mental Contents

The HMFH and the AFH provide different explanations for the emergence of previously repressed mental contents, without their being interpreted. The HMFH assumes that these contents may come forth because the patient unconsciously decides that he may safely experience them. The AFH assumes that they may come forth if they push through the patient's repressions to consciousness or if they are disguised or isolated so that they evade the repressing forces.

The two theories may be tested against each other because they make different predictions about how the patient will feel while unconscious mental contents, which have not been interpreted, are emerging. According to the HMFH the patient will have overcome his anxiety about the contents before they come forth, and so will not feel especially anxious while they are emerging. Also, according to the HMFH, the patient will have no need to be defensively uninvolved with the contents while they are emerging, and so will experience them fully.

The AFH hypothesis assumes that if previously repressed mental contents come forth because they push through the patient's repressions, the patient will come into conflict with them while they are emerging, and so feel increased anxiety. If they come forth because they are disguised or isolated, and so evade the forces of repression, the patient will not feel anxious about them while they are emerging. However, because they are disguised or isolated, he will not experience them vividly.

Gassner et al. (1982) tested the two hypotheses against each other by determining how the patient felt during the coming forth of previously repressed mental contents that had not been interpreted. Gassner located a number of speech segments in

the transcripts of sessions 41–100 in which Mrs. C. was becoming conscious of such contents, and which our raters judged to have been warded off during the first 10 sessions of the treatment. Then Gassner had raters determine, by several measures, how anxious the patient felt while these contents were emerging. She found that in these segments Mrs. C. was not especially anxious. By one measure of anxiety, Mrs. C. was no more anxious in these segments than in random speech segments. By another, she was significantly less anxious statistically than in random segments. Gassner also had raters measure Mrs. C.'s level of experiencing in these segments. They found that Mrs. C.'s level of experiencing was significantly higher statistically in these segments than in random segments. This finding shows that Mrs. C. was not withdrawn or defensively uninvolved with the previously repressed contents while they were emerging, and indeed was more focused on them than on random contents. This finding was statistically significant.

This combination of findings is the one predicted by the HMFH but not by the AFH. Thus, the findings support our hypothesis.

Patient's Transference Demands on the Analyst—Testing Beliefs versus Seeking Gratifications

The HMFH and the AFH provide different explanations for why the patient in analysis makes transference demands on the analyst. According to the HMFH the patient makes such demands in accordance with an unconscious decision. He does so primarily to test his pathogenic beliefs as part of his working to disprove them. He unconsciously hopes to demonstrate that the therapist will not behave as his pathogenic beliefs predict. According to the AFH, he makes these demands primarily in order to gratify unconscious impulses. We tested the two hypotheses against each other by studying how Mrs. C. felt during the first 100 sessions of her analysis when she made

transference demands on the analyst, and he did not yield to them.

We assumed from our understanding of Mrs. C.'s plan that she made such transference demands in order to test the pathogenic belief that she could force the analyst to yield to her demands. She was burdened by this omnipotent belief, and wanted to disprove it. We hypothesized that Mrs. C. would feel anxious while testing the analyst, for she would fear that he would yield to her demands and so fail her tests. However, we assumed she would feel relieved upon observing that the analyst did not yield² to her demands, and so would pass her tests. She would feel less anxious and less tense.

Analysts who subscribe to the AFH and who read the same transcripts we did assumed that Mrs. C. was making transference demands on the analyst in an attempt to gratify unconscious impulses. They predicted that when the analyst did not yield to her demands, her impulses would be frustrated so that she would become more tense.

Silberschatz (in Weiss et al., 1986, Chapt. 18) tested the two hypotheses against each other by demonstrating that immediately after the analyst responded to Mrs. C.'s demands by not yielding to them, Mrs. C. became significantly (statistically) less anxious, more relaxed, bolder, and more loving than she had been just before the analyst's responses. These findings support the HMFH and not the AFH. (We assumed that Mrs. C. became more loving after the analyst passed her tests because she was pleased that the analyst was helping her.)

The Gassner and the Silberschatz studies fit well together. Gassner's study indicates that during her analysis Mrs. C. felt safe enough to bring previously repressed mental contents to consciousness without their having been interpreted. Silberschatz's studies show how she may have acquired the sense of safety that permitted her to bring forth these contents. She

²Mrs. C. is exceptional in that she experienced the analyst's neutrality as passing her tests. In many instances analytic neutrality, as recommended by the 1911–1915 theory, is not the optimal response to the patient's testing.

may have done this by testing her pathogenic belief that she could force the analyst to yield to her demands, and was relieved when the analyst passed her tests by not yielding. She became more secure with the analyst and able to bring forth previously repressed mental contents. (Gassner found that some of the contents Mrs. C. brought forth without their having been interpreted concerned Mrs. C.'s fear of being in control, and her fear of being aggressive.)

Studies of Patient Working in Analysis to Disprove His Pathogenic Beliefs

From our theory we hypothesized that a patient may benefit from any intervention by the analyst that he can use in his efforts to disprove his pathogenic beliefs and to pursue the goals forbidden by them. That is, he may benefit from any intervention he can use in his efforts to carry out his plan. Moreover, he may benefit immediately after such an intervention, for he may infer from it that the analyst disagrees with the beliefs and is sympathetic to the goals. He may then feel relieved and less anxious, and so may take a small step in the direction of disproving the beliefs and pursuing the goals. Also, since he regulates his repressions in accordance with his pathogenic beliefs and the dangers they foretell, he may, after a pro-plan intervention, become slightly more insightful and slightly less inhibited.

Since the testing of this hypothesis requires a reliable formulation of the patient's unconscious plan for analysis, our first step was to demonstrate that independent judges could agree reliably on the patient's plan. Caston (1986) demonstrated this. He broke down the patient's plan formulation into four components: (1) the patient's goals, (2) the obstructions (pathogenic beliefs) that impede the patient in the pursuit of his goals, (3) the tests the patient might perform in his efforts to disprove the pathogenic beliefs, and (4) the insights the patient could use in his efforts to disprove these beliefs.

Caston provided independent judges with extensive lists of possible goals, pathogenic beliefs, tests, and insights. These included all such items that Caston considered plausible. He also gave the judges the condensed transcripts of the first 10 sessions of Mrs. C.'s analysis. He asked them to read the transcripts, then rate the items in each of the four categories for their pertinence to the patient's plan. He demonstrated a high level of reliability.³

Studies on Immediate Effects of Interpretation During Analysis

Caston used his formulations of Mrs. C.'s plan to study the effects on her of the analyst's interventions during the first 100 sessions of Mrs. C.'s analysis. He tested the hypothesis that during these sessions Mrs. C. would demonstrate an immediate favorable response to pro-plan interventions (that is, to interventions she could use in her efforts to carry out her plan) and that she would not respond favorably to, or would be set back by, anti-plan interventions. In particular, Caston hypothesized that following a pro-plan intervention the patient would immediately become bolder and more insightful, and that following an anti-plan intervention she would become less bold and less insightful. (Mrs. C.'s plan consisted in part of her disproving the belief that she was responsible for the happiness of her parents and siblings.)

Caston found strong confirmation of this hypothesis in his pilot study. However, in his replication study, he found that this hypothesis holds for pro-plan interventions but not for anti-plan interventions. Apparently Mrs. C. responded powerfully to pro-plan interventions but was not set back by anti-plan interventions.

Bush and Gassner (1986), in a study of the last 100 sessions of Mrs. C.'s analysis, tested the hypothesis that Mrs. C. would

³The reliability coefficients were as follows: immediate goals, .87; eventual goals, .72; obstructions, .91; test power, .85; plan compatibility of interpretations, .92.

demonstrate an immediate beneficial effect from pro-plan interventions and be set back by anti-plan interventions. Mrs. C.'s plan during these sessions, which was to some degree unconscious, was to prepare for termination by working to disprove her belief that if she revealed her wish to leave her analyst she would hurt him. Bush and Gassner hypothesized that Mrs. C. would show a beneficial effect immediately after an intervention, which she could use to reduce her guilt about terminating, and that she would be set back by an intervention she would experience as impeding her efforts to terminate. Bush and Gassner found strong statistical support for this hypothesis.

Immediate Effect of Interpretations on Patients in Brief Psychotherapy

Fretter (1984), Broitman (1985) and Davilla (1992) studied⁴ the transcripts of three brief (16-session) psychotherapies using a revised version of Caston's method (Curtis and Silberschatz, 1986; Silberschatz and Curtis, 1986; Rosenberg et al., 1986). In contrast to Caston and to Bush and Gassner, Fretter and Broitman confined their studies to the effects of interpretations, that is, interventions designed to convey insight. Fretter hypothesized that immediately following a pro-plan interpretation the patient would be more involved with what she was saying, and so would demonstrate a higher level of experiencing. Fretter demonstrated this by correlating the planfulness of the therapist's interpretations with the degree to which the patient shifted in her level of experiencing in speech segments from just before to just after his interpretations. When she correlated the mean level of the planfulness of all interpretations in a given hour with the mean level of all the shifts in experiencing in that hour she found significant correlations: .78 in one case, .54 in another, and .57 in a third (Silberschatz et al., 1986a).

⁴Their studies were carried out under the supervision of Curtis and Silberschatz.

Broitman studied the same cases, the same interpretations, and the same speech segments as Fretter had studied. She demonstrated a statistically significant correlation between the planfulness of the therapist's interpretations and immediate shifts in the patient's level of insight as measured by a generic insight scale.

Davilla (1992) studied the same patients, the same interpretations, and the same speech segments as Fretter and Broitman. She demonstrated that in two of the three cases, the patient, after a pro-plan interpretation, moved toward his goals as defined in the patient's plan formulation (and the third patient did not). This finding was statistically significant.

Fretter's, Broitman's, and Davilla's findings support our hypothesis.

Long-term Effect of Interpretation

Fretter (1984) tested the hypothesis that pro-plan interpretations have a lasting as well as an immediate effect. She did this by calculating the percentage of pro-plan and anti-plan interpretations offered to each patient, and then by correlating this percentage with how well the patient was doing six months after the termination of therapy. The treatment outcome at six months was assessed by clinical interviews conducted by an independent evaluator and by a battery of nontheory-based outcome measures completed by the patient (Silberschatz et al., 1986a). Fretter found strong support for our hypothesis. She demonstrated that in the three cases studied, the patient who was offered the highest percentage of pro-plan interpretations did the best, the patient who was offered the second highest did second best, and the patient who was offered the lowest did the worst.

Norville (1989) tested the hypothesis that the mean planfulness of the interpretations a patient received would correlate with the treatment outcome at six months after termination as measured by an independent evaluator and by a battery of

nontheory-based outcome studies completed by the patient. She tested this hypothesis using the transcripts of seven brief psychotherapies of sixteen sessions each, which included the three therapies studied by Fretter and Broitman. She had her raters, in each case, rate all of the interpretations in a sample of five sessions, which she obtained as follows: she divided the last 15 sessions of each therapy into five groups of three sessions each; one such group consisted of sessions two, three, and four, another of sessions five, six, and seven, and so forth. She then selected, at random, a session from each group of three. She found that the mean of the ratings for planfulness of the interpretations offered the patient in his therapy correlated with the treatment outcome in six of the seven cases.

Studies of Patient's Testing of Therapist

We carried out a series of studies to determine how the patient in brief psychotherapy reacts when the therapist passes his tests. In a study of two patients, we demonstrated that immediately after a passed test the patient showed a higher level of experiencing than just before the passed test. One of the patients also showed an immediate increase in boldness and relaxation; the other did not (Silberschatz and Curtis, 1993).

In another study we demonstrated that in two out of three cases the patient reacted to a passed test by demonstrating an immediate decrease in tension, as measured by the Voice Stress Measure (Kelly, 1989). In a study of one patient we demonstrated that after a passed test the patient showed more planned insight (as defined in the patient's plan formulation) than immediately before the test (Linsner, 1987). In another study of one patient we demonstrated that immediately after a passed test the patient showed greater capacity to exert control over regressive behavior (Bugas, 1986).

Changing Levels of Insight in Brief Psychotherapies—Evidence for the Plan Concept

The starting point for this study was our clinical impression that the patient often demonstrates considerable insight into his pathogenic beliefs and goals at the beginning of therapy, then after a short time appears to lose this insight. We hypothesized that the patient makes his problems clear to the therapist at the beginning so as to provide the therapist with the knowledge he needs to help the patient. Then the patient appears to lose insight, and he makes false statements about himself in order to test the therapist. The patient hopes the therapist will supply the missing insights and refute the false statements. He loses insights or makes false statements even though he receives helpful (pro-plan) interpretations.

We tested this hypothesis by studying four brief psychotherapies. In each one the patient knew in advance that the therapy would be limited to 16 sessions (Edelstein, 1992; O'Connor et al., 1993; Weiss, 1992). Of these four patients, three received reasonably good interpretations; the fourth did not. We determined the patient's levels of pro-plan insight in each of the 16 psychotherapy sessions, and in three interviews conducted by an independent evaluator: an intake interview, an interview immediately after the termination of the therapy, and another interview six months after termination. In determining the patient's level of insight in a given session, we first located all the pro-plan insight statements in that session. Then, we had each insight statement rated for the degree to which it was pro-plan. Finally, we added up all the insight ratings in each session.

A striking finding is immediately apparent from graphs of the patients' levels of insight throughout the 16 sessions and the three evaluation interviews. In each case the level of insight throughout the 19 sessions follows a similar pattern: each patient shows high insight at the beginning, low insight at approximately the middle of therapy, and a rise in insight toward the

end. In each case a parabolic curve fits the data.⁵ This curve was the length of the therapy plus the follow-up interviews. This finding was statistically significant (see Figure 1).

These findings support the hypothesis that the patient has an unconscious plan for therapy. He knows in advance that he has only 16 sessions, and according to our hypothesis he unconsciously wishes to use his allotted time as efficiently as he can. He must show insight at the beginning in order to provide the therapist with the knowledge the therapist needs to help him. Then he begins to test his pathogenic beliefs in relation to the therapist. He does so by losing insight and by presenting false ideas about himself in the hope that the therapist will supply the missing insights and refute the false ideas. He tests mildly at first, for he is not sure that the therapist will pass his tests. As he experiences the therapist as passing his tests, he tests more vigorously, until in the middle of therapy he loses all insight. As the patient gets closer to termination, he tests less vigorously because he will soon be left without a therapist to pass his tests. Also, since he does not test his pathogenic beliefs with the independent evaluator in the followup sessions, his level of insight in these sessions is higher in each case than during the middle part of therapy, and in several cases higher than at any point in therapy.

We determined the planfulness of the therapist's interpretations in each therapy. In two of the cases, Rachel and Robert, the interpretations were consistently highly pro-plan. In the case of Irene, they were moderately pro-plan. This shows that in these cases the patient's decreasing levels of insight during the first part of therapy does not reflect the patient's compliance with bad (anti-plan) interpretations. Also, our ratings of the

⁵In a fifth therapy, studied after this paper was written, the patient also lost insight during the course of therapy. However, a parabolic curve did not significantly fit the raw scores due to greater variability in insight throughout the therapy. The plot of smoothed scores, however, indicated that the pattern was also parabolic, though less dramatically so. The quadratic regression closely approached significance ($p = .052$ for the quadratic term in the regression).

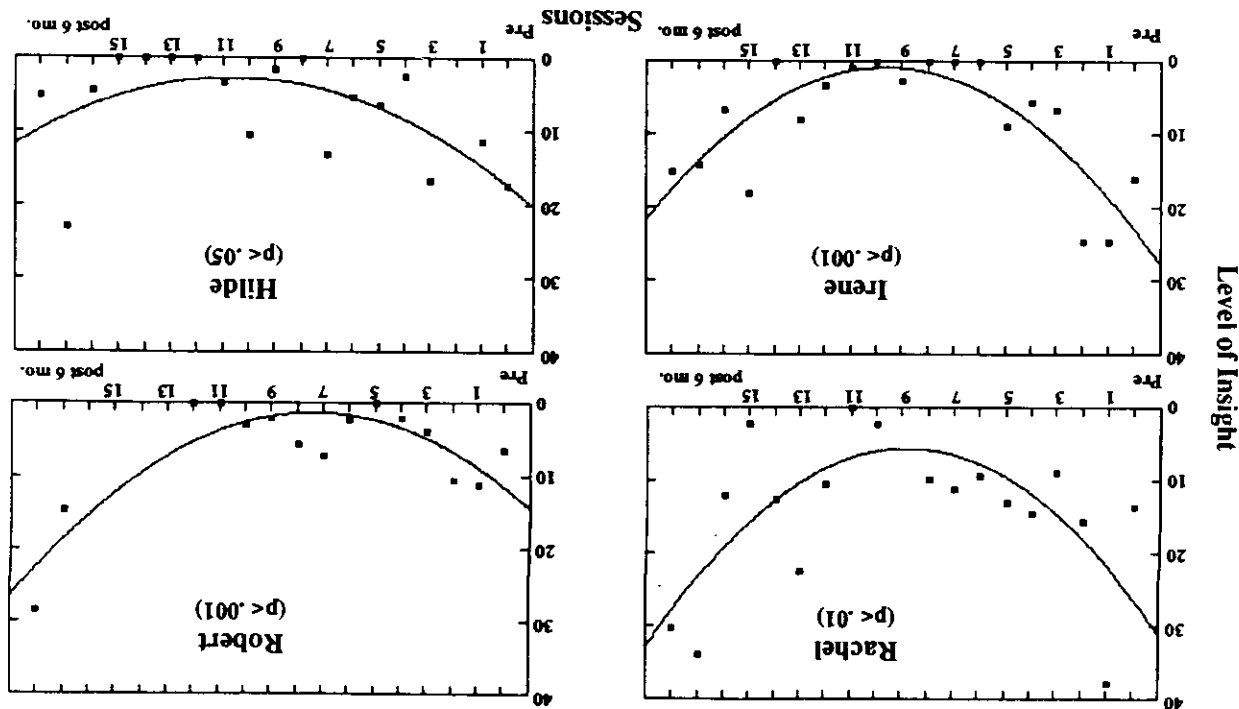


FIGURE 1

therapists' interpretations enabled us to show that patients who receive good interpretations have relatively high insight in the followup interviews. Rachel and Robert received good interpretations and demonstrated relatively high insight in the six-month followup interviews. Irene received moderately good interpretations and showed moderate insight in the six-month followup interview. Hilde's therapist was less skillful than the others. He gave Hilde poor interpretations, and Hilde showed little insight in the six-month followup interview. In the case of Hilde, her low insight during the middle and later parts of her therapy may express not testing, but compliance with false (anti-plan) interpretations.

At this point the reader may ask, "How do you reconcile Fretter's and Broitman's findings, that after a pro-plan interpretation the patient demonstrates an immediate increase in insight and experiencing, with the findings of the present study that, even while receiving pro-plan interpretations, the patient at first appears to lose insight?" According to our explanation the patient (as suggested by the research described above) reacts to a pro-plan interpretation by experiencing an immediate increase in security, and therefore permits a small but measurable increase in insight. However, after a short time he may rely on his greater security not to acquire greater insight—as measured by the Insight Scale (Edelstein, 1992; Grebel, 1993)—but to test the therapist more vigorously. His behavior may be compared to that of a man who is striving to accomplish a major task and who suddenly inherits a moderate sum of money. He feels immediate relief and greater security. However, rather than simply enjoying his greater security, he uses his new capital to work harder than ever to achieve his goals.

Some Implications of the Research

Our research supports the idea that the psychoanalytic theory of the mind and therapy may be studied fruitfully by empirical, quantitative methods. This is so because the behavior of the

patient is lawful. For example, within broad limits, all patients suffer from pathogenic beliefs, all test these beliefs regularly in relation to the therapist, and all benefit when the therapist passes the patient's tests. As our research demonstrates, our hypotheses about the patient's behavior give rise to predictions that may be tested and either supported or refuted by quantitative methods. For example, we demonstrated that the patient benefits immediately when the therapist behaves appropriately to his tests.

For another example, in our study of the effects of interpretation, we specified in advance the relation between two variables: the planfulness of the therapist's interpretations and the patient's responses to the interpretations as indicated by changes in his levels of experiencing. We then studied the relation between the two variables, and we demonstrated a statistically significant correlation between them.

Our research throws light on the nature of analysis. It does not support the contention of some theoreticians that the analyst may scarcely understand the patient until he and the patient have explored the patient's problems together for many months or even years or until certain dynamisms have evolved. We found that in the case of Mrs. C. we could make a reliable formulation of the patient's unconscious pathogenic beliefs, goals, and plans from studying the transcripts of the first 10 sessions of her analysis. And Gassner and Bush demonstrated that the plan inferred from these first 10 sessions was applicable to the process of termination, as it was still guiding the patient's behavior during the final 100 sessions of her analysis. Throughout her analysis, Mrs. C. was unconsciously worried about the analyst for whom she felt omnipotently responsible. During the first 100 sessions she tested her belief in her responsibility for the analyst by attempting to demonstrate to herself that she could not push him around. During the last 100 sessions she tested this same belief by attempting to demonstrate to herself that she would not hurt the analyst if she made clear to him her wish to terminate. What I have said about analysis also

applies to brief psychotherapy: the therapist may make a reliable plan formulation applicable to the entire therapy by simply studying the transcripts of the intake session and the first two therapy sessions.

Our studies support the higher mental functioning hypothesis and the various propositions derived from it that are outlined at the beginning of this paper. The studies indicate that the patient is not well characterized as continually attempting to gratify repressed impulses. He is better characterized as repeatedly testing the analyst and as demonstrating a high degree of responsiveness to whatever the analyst says or does. He demonstrates immediate reactions to the analyst's interventions, interpretations, and behavior. He lifts his representations, however slightly, immediately after a pro-plan interpretation.

The research indicates that in analysis it is the patient rather than the analyst who sets the agenda, and that it is the analyst's responsibility to infer where the patient unconsciously wants to go, and to help him get there.

The research also suggests that the patient benefits not just from interpretation but, equally important, from his relationship to the analyst. Indeed the patient may achieve a great deal without benefit of interpretation if the analyst, by his approach, passes the patient's tests. Our research supports the idea that the patient benefits from a particular kind of corrective emotional experience, namely the experience that the patient himself unconsciously is seeking by his testing of the analyst. Our findings are also consistent with the findings of certain social psychologists, for example, those of Brim (1992) with regard to persistent mastery strivings in adults. They are also compatible with Wallerstein's (1986) conclusion that supportive therapy is just as effective as insight therapy in bringing about structural change. Moreover, they fit the observations of self psychologists that the patient may demonstrate progress after the therapist responds to him with appropriate empathy.

Our research provides the therapist with criteria for deciding whether he is on the right track. The therapist may assume he is on the right track if the patient reacts to him by becoming more relaxed and secure, bolder and more insightful, or alternatively, by testing his pathogenic beliefs more vigorously.

Our findings should be regarded as tentative until replicated. The ultimate guarantee of freedom from both error and research bias is independent replication of research findings.

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