

# Defense Analysis and the Emergence of Warded-Off Mental Contents

## An Empirical Study

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**This paper reports an empirical study of the relationship between defense analysis and the emergence of warded-off mental contents. We shall develop, first, a new and explicit model of how changes in a defense may enable a patient to experience the mental contents he had been warding off by that defense. We shall describe, then, an initial research study in which the fit between theory and observations was investigated in a single case.**

IN undertaking research on complex clinical ideas about the therapeutic process, an investigator is faced with difficult choices which cannot be resolved in an ideal way. He is not likely to find in the literature, or to be able to devise, predetermined objective measures which adequately represent his key clinical concepts. Judgments about a patient's impulses, defenses, and transferences, for example, are relatively complex inferences, mediated by theory, and not derived in a univocal way from observations. Except for simple, illustrative cases there are no rules for converting observations directly into inferred categories or processes. If the investigator chooses, then, to use a priori categories or measures to classify clinical observations, the apparent gain in objectivity may be at the expense of clinical reality; that is, the reliable measures are unlikely to capture the phenomena of interest, and may in fact fail to capture any unitary process. If the investigator chooses instead to seek objectivity and relevance by using independent clinical judgments, he may find it very difficult to achieve satisfactory interjudge reliability about defenses and other inferred processes.<sup>1-2</sup> Finally, if the investigator relies exclusively on the traditional clinical case study method which has been indispensable to the development of psychoanalytic theory, he may be unable to establish his findings in an entirely public way, because his observations are not ordinarily concurrently accessible to others, and his procedures for ordering his observations and arriving at conclusions do not yield unique solutions which command high intersubjective agreement.<sup>3</sup>

In our work, we wish to study complex psychoanalytic ideas about the therapeutic process which we have derived from careful clinical study. At the same time, we seek to

go beyond the traditional case study method, and to establish our observations and conclusions in as public a manner as possible. These combined goals can only be accomplished, we believe, in a stepwise fashion in which the fit between theory and observations is investigated in a series of instances, progressively controlling for many of the possible sources of error. In this study, we have sought to articulate a theoretical position with sufficient clarity to enable us to specify links between concepts and observations, to demonstrate that the observations can be made reliably by independent others, and to examine the correspondence between observations and theoretical expectations.

The substantive problem concerns a central paradigm of most uncovering psychotherapies; namely, that the removal or alteration of a defense permits the patient to become aware of mental contents (affects, impulses, ideas, memories, etc) which he had formerly warded off by the defense. But just how do changes in the defense cause or enable the formerly warded-off material to emerge? An investigation of this question may shed light on the therapeutically central issue of how unconscious mental contents become conscious during a therapeutic course.

The early psychoanalytic view, formulated before ego psychology, understood the relationship between defense analysis and the emergence of warded-off contents in a simple way. The defense was a counterforce standing between the warded-off tendency and unconsciousness. When the defensive barrier was removed, the warded-off content came to the surface, propelled by its own thrust.

With the advent of ego psychology, it became generally recognized that defenses are not in any simple sense of the term abolished by psychoanalytic treatment, but are modified (Kris,<sup>4</sup> Loewenstein,<sup>5</sup> Hoffer,<sup>6</sup> Gero,<sup>7</sup> Gill,<sup>8</sup> and Lampl-de Groot<sup>9</sup>). These and other authors have suggested that the analyzed defense may be more subject to voluntary control, more flexible, more adaptive, more in accord with the secondary process. But if defenses are modified rather than removed, how then do we account for the emergence of the warded-off contents? The old model explained the patient's bringing forth of a warded-off content as resulting from the abolition of a barrier, but the concept that the barrier is abolished is no longer widely accepted. The explanation provided by the old model, however, has not been replaced.

We have proposed<sup>10-11</sup> a new model, consistent with contemporary ego psychology, of how defense analysis works. The model includes a conception of how the defense is

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changed through its analysis, and of how this modification of the defense enables the patient to experience the formerly warded-off content. According to this thesis, the essential change brought about by the analysis of a defense is a change in the relationship of the defense to the rest of the ego. The patient's major unconscious defenses are separated off from the rest of the ego by secondary defenses. Freud<sup>12</sup> pointed out that an unconscious defense is "segregated within the ego," (p 341) so that it does not necessarily function in harmony with the major trends of the ego. The patient therefore cannot use a defense to ward off a mental content *at will*; rather, the defensive process operates unconsciously, and not necessarily in accord with the patient's conscious intentions. Similarly, the patient cannot suspend the functioning of the unconscious defense at will. For this reason, an unconscious defense is unsatisfactory as a mechanism for regulating the contents it is keeping unconscious. In other words, since a patient cannot regulate his defenses, he cannot use them in any modulated, voluntary way to regulate the warded-off impulses and affects. A patient's unconscious defenses do not provide him with enough control of the contents that they are keeping unconscious to make it safe for him to bring these contents to awareness.

The successful analysis of a defense brings it under the control of the rest of the ego, so that it comes to function in harmony with the ego's major trends. We have referred to this as the *integration* of the defense within the ego, in contrast to its initial segregation. Integrated defenses lose their primitive qualities, and function as "reliable and egosyntonic controls."<sup>12</sup>(p331) The integrated defense thus has the qualities of the analyzed defense referred to earlier, and also resembles the "coping mechanisms" described by Kroeber<sup>13</sup> and by Haan.<sup>14,15</sup>

The ego's acquisition of the reliable control mechanism strengthens it in its relationship to the content previously warded-off by the segregated defense. The patient can use this control mechanism more or less at will to regulate the content. The patient's capacity to regulate the warded-off mental content makes it safe for him to experience it, because he can control the experience, turning away from it at will if it becomes too painful or threatening. In this way, the patient can dose the new experience (the warded-off content), and can reassess the danger associated with it.

This theory may be called the *integration-regulation* (I-R) model of defense analysis. In contrast to the *barrier removal* (B-R) model, this theory explains how the patient acquires the strength to tolerate the formerly intolerable warded-off mental contents, how it happens that these contents do not overwhelm or traumatize him as they emerge to consciousness, and how he is able to continue to regulate his impulses after the successful analysis of the defense. The I-R model of defense analysis is brought within the scope of a broader theory about how the unconscious becomes conscious in Weiss's<sup>11</sup> recent manuscript.

#### The Integration of a Defense

The I-R model of defense analysis was developed out of clinical experience, and then subjected to the more systematic investigation to be reported here. Our aim in this

investigation was to document, by the use of observations with high intersubjective agreement if possible, two points: first, that a defense being analyzed undergoes change in the direction of greater patient control over the defense and second, that this change in the defense permits (is associated with) the emergence of the mental contents warded off by the defense.

The study required a case in which we could identify an instance of defense analysis, and of the emergence of initially warded-off mental contents. We could then attempt to describe how and in what sequence the defense changed, and at what point the warded-off material became conscious. We could then determine whether the nature and ordering (sequence) of these changes corresponded to the integration-regulation model of defense analysis.

Our requirements were met by the first 110 sessions of the psychoanalysis of Mr. A, a 35-year-old single male graduate student suffering from severe obsessive-compulsive character problems. Preliminary review of these sessions disclosed that the defense of undoing was the main topic of the analyst's interpretations during this period. Further, the patient began to experience during this period a variety of strong affects, which, in our clinical judgment, he had initially warded-off by the undoing defense in conjunction with isolation. (The definition of this defense, the nature of the interpretations given, and the relationship between the defense of undoing and warded-off affects will be discussed later.) We thus had the general conditions for a systematic study: a defense was consistently analyzed during these sessions, and material warded off by the defense emerged. How did the defense change over this period of analysis? And was there a relationship between particular changes in the defense and the emergence of warded-off contents?

The basic observations available for study were the daily process notes recorded by the treating analyst after each session. The notes were entirely descriptive; that is, they did not include any inferences or ideas of the analyst about the material, but were a concise description of the manifest contents and transactions of the hour as recalled immediately afterwards. The notes were taken in the first year of a five-year analysis which was completed several years prior to this study, so the notes were not taken with the present study or its hypotheses in mind. Nonetheless, process notes are a highly selective, biased, indeterminately distorted sampling of the universe of events actually occurring during analytic sessions, and reliance on such notes is almost universally adjoined by psychotherapy investigators. Our reasons for not simply and completely adhering to this view, and our considered opinion on the place of process notes in clinical research with serious scientific pretensions, is developed at length elsewhere.<sup>3</sup> Those points central to the present study will be summarized here.

The use of process notes in this phase of the research is based on a practical consideration, and a related strategic judgment about the state of our knowledge. The practical consideration is that this is the only feasible method of examining, without predefined categories, the major changes which take place in analysis over extended peri-

ods of time. Process notes provide a permanent and public (ie, available to independent study by others) record of a trained observer's report of the sessions. The notes may effect about a 50-fold reduction of the material obtained per session from a typescript of a tape recording. In spite of this condensation, such notes are the common currency of much clinical teaching and supervision, and have provided us in the present instance with sufficient detail about the patient's drives, affects, transference attitudes, etc, to construct a comprehensive dynamic account of the course of the analysis. Further, the process notes for a year of analysis may be read in a delimited period of time, and the experienced reader will retain at least a broad picture of the overall course of events. Particular events, such as when the analyst first interpreted a particular defense, or when a particular content first emerged, may be located.

The strategic judgment is that if we allowed our investigation to be dominated by tape recordings at this stage, we would either have to preselect very isolated phenomena to study, or risk seeing our work founder on voluminous data beyond our capacity to address systematically, or even to understand.

Reliance on process notes in this study is based on the assumption that, in spite of the gross errors, omissions, and distortions which will inevitably be demonstrated in session by session comparison of notes to actual recordings, the notes will convey major trends, and will approximate the recordings in regard to these major trends. This assumption will be tested empirically on a new tape recorded case under study by our research group.

Using then the process notes for the first 110 sessions of one patient's analysis, we wished to determine whether there was a demonstrable transformation of the patient's unconscious undoing defense into an ego-syntonic control mechanism, and further, whether the integration of undoing (if we could demonstrate it) was associated with the patient's coming to experience strong affects.

We proceeded in stepwise fashion. The first step involved intensive clinical study and induction in order to discover, describe, and conceptualize changes in the defense of undoing during this unit of analytic work. This step involved clarification of concepts and linking of concepts to observations. The necessity for doing so warrants comment. There have been virtually no systematic observations prior to our own work of the different ways in which a defense might be manifested prior to, during, and subsequent to its analysis. For example, there are no published studies (except Weiss<sup>10</sup>) within or outside of the psychoanalytic literature which describes "stages" in the defense mechanism of undoing during a therapeutic course or any other defense mechanism, for that matter. We have thus had to seek out relevant observations in the case material and conceptualize these observations as a prelude to the development of less ad hoc and more objective studies. Our initial step was to spell out in the case material a series of observable intermediate stages between the segregated defense and the integrated control mechanism.

The second step was to determine that these changes in the defense, these stages from segregation to integration,

could be observed reliably by independent judges. In this step we used objective coding or scaling procedures which minimized clinical judgment.

The third step was to determine whether the reliably observed changes in the defense of undoing occurred in accordance with our theoretical expectations; that is, would there be an orderly series of changes from less integrated to more integrated. In this step, a statistical test was applied.

The fourth step was to develop reliable measures of the patient's affective experiences, so that we could demonstrate whether and when strong affects appeared.

The final step was to examine the relationship between changes in the undoing defense and the appearance of strong affects, to determine whether the observed relationship corresponded to the integration-regulation model.

On the basis of the first step, the clinical inductive study, we were able to define four stages of increasing integration of the undoing defense. Before describing these stages, we should like to present our definition of the undoing mechanism. Freud<sup>16,17</sup> initially described undoing in regard to certain compulsive symptoms which occurred in the form of paired acts, the second of which magically nullified the first. In an extension of the original usage, undoing has also been applied to sequences of ideas or attitudes, in which the second idea or attitude magically cancels the first. We have defined the undoing defense as the unconscious *shifting* from one action, or idea, or impulse, or attitude to an alternative action, or idea, or impulse, or attitude, in which the second tendency is experienced as magically nullifying or cancelling the initial tendency. The patient may, for example, express an idea which is associated in his mind with attitudes of defiance, and then unconsciously shift to another idea which is associated in his mind with attitudes of submission, unconsciously experiencing the second idea as magically nullifying the first. Undoing processes of this kind may be observed with great frequency in many obsessive-compulsive patients.

We have chosen to define undoing as the *process of shifting* between alternative mental contents, rather than in terms of the particular contents expressed. This definition identifies the common process operating in relation to a number of differing contents. Mr. A. was observed to shift repeatedly, initially without awareness, between ideas or attitudes reflecting such opposites (for him) as defiance and submission, pride and humiliation, heterosexuality and homosexuality, cruelty and suffering, flippancy and seriousness, and so on. Furthermore, the change which we propose took place was specifically *the acquisition of control over shifting*, rather than simply increased awareness of and tolerance for given mental contents. Had we focused our definition on particular mental contents observable in specific instances of undoing, we would have failed to detect this more fundamental change. The independence of this change from change in specific contents should also be emphasized. The analyst began to interpret the patient's tendency to shift from the idea that he was being stubborn to the idea that he was being submissive, and vice versa. The patient then began to observe how he

shifted in like manner between other (as yet uninterpreted) mental contents, such as feeling important, and then feeling insignificant.

The process of shifting may itself be a source of gratification as well as a means of warding off threatening contents, as Schafer<sup>18</sup> has recently emphasized. This viewpoint, based on Waelder's principle of multiple functioning,<sup>19</sup> explicitly places even the classical defense mechanisms (eg, undoing, repression, projection) within an hierarchial conception of mental organization. Each "conflicted position" (to use Schafer's term) in the defense-impulse hierarchy expresses a wishful activity as well as serving to ward off the more threatening conflicted position below it in the hierarchy. We might thus anticipate that defenses such as undoing would be subject to integration within the ego just as other mental tendencies. We have assumed this viewpoint in our work, and have studied the vicissitudes of both classical defenses, and of "impulses" used for defensive purposes (eg, stubbornness as a defense against submission), in the identical manner. The integration of undoing is—from this vantage point—to be expected in analysis, although this inference from analytic theory has not heretofore been made. Analytic writings have not contained any discussion of the integration of the undoing defense, and have provided no hints of the changes that might be observed in this defense as it was becoming integrated. Needless to say, there have been no empirical studies of the integration of undoing.

On the basis of the preceding definition of the undoing defense, we found it possible to describe stages of increasing awareness of and control over the initially unconscious and involuntary shifting between alternative tendencies. We defined these stages in terms of the patient's own observations about alternative mental tendencies within himself, and awareness of shifting between such tendencies.

In stage 1, the patient had *no* awareness that he shifted between one alternative tendency and another. During this stage he maintained the view that he could not have alternative ideas about any particular situation. This was a defense against any awareness of his shifting; that is, it was a secondary defense against awareness of the primary defense of undoing. If he had allowed himself to experience situations as open to choice, he would have experienced doubt, indecision, and confusion as a result of automatic vacillation between alternative tendencies.

In stage 2, the secondary defense was relaxed. The patient became aware that he experienced alternative tendencies within himself, and felt confused by this observation. Although he was now aware of opposing mental tendencies, he was not yet aware that he shifted back and forth between these tendencies. In this stage, although the patient could not yet observe his use of undoing, the undoing process was readily observable to the analyst.

In stage 3, the patient directly observed undoing processes. For example, he observed himself shifting back and forth between alternative positions, balancing one idea against an opposing idea, turning involuntarily from one train of thought to an opposing train of thought. He would notice, for example, that as soon as he thought of

sitting down to study, the idea of playing tennis would pop into his head. Or, if he had the idea that he was not doing a work assignment because he did not *want* to do it, he noticed that he would immediately begin to feel that he wasn't doing the work assignment because he did not *know how* to do it. In this stage, he became aware that he would use one idea or attitude or activity to cancel out another, and, further, he became aware that the idea that one tendency could actually cancel out another was irrational.

In stage 4, the patient observed that he could control his shifting; that he could deliberately or actively shift from one alternative to another, and also could keep to one train of thought without shifting to its opposite. These were self-observations of a regulatory process, derived from the earlier undoing mechanism, but now shorn of its magical properties, and acting in harmony with other ego interests and trends. We conceive of stage 4 as transitional. In a hypothetical stage 5 in which the regulatory process is fully integrated, the patient would not continue to observe and comment on it. The process would operate smoothly, and ordinarily without any special attention cathexis. Thus, it would no longer be detectable in terms of self-observations by the patient, and would require definition in terms of such ego capacities as voluntary persistence in a desired activity, and flexibility in turning from one activity to another voluntarily.

Let us summarize these four stages along a dimension of awareness and control. In the first stage, the patient was aware that he could only have *one* attitude toward any situation; in the second stage he became aware that he actually held *two or more contradictory attitudes*; in the third stage he became aware that he *shifted between* the opposing attitudes, and had assumed that each attitude cancelled the preceding one; in the fourth stage he *acquired control of shifting*—that is, he could actively turn from one attitude to another, or could hold on to one attitude if he wished to do so.

On the basis of this rationale for the four stages, we developed a series of rules which would enable independent judges to read the process notes of the analytic sessions and determine what stages of the integration of undoing were observable in that session. We constructed, in effect, a four-stage scale for the integration of undoing which could be applied to notes of analytic sessions by independent judges. Each analytic session received a single "integration of undoing" score based on the highest scorable instance within the session. Many sessions, of course, had no self-observations by the patient scorable by this scale.

Our next question was whether independent judges could apply this scale reliably to the process notes of the analytic sessions—ie, would their judgments agree with each other.

The related question was whether our integration hypothesis would be supported by these independent judgments. Our hypothesis would assume an increase in stage of integration in later sessions, and generally, stage 1 should precede stage 2, etc. Thus, if independent judges applied the scale to scrambled sessions—that is to sessions presented to them in random order so that they could not detect whether they were scoring an early or late session—

would those sessions which were in fact later in the unit of 110 sessions tend to receive higher integration scores?

We selected and trained three psychologist judges (two of whom were unfamiliar with the case, and the hypothesis of this study), and then had them score independently batches of 40 sessions presented in random order. Interjudge reliability coefficients for the final 40 sessions were .76, .82, and .97, respectively, indicating a very satisfactory level of reliability for this scale. The final official integration of undoing score assigned to each session was that assigned the session by all raters, or, when disagreements occurred, a consensus score, reached by discussion between raters.

When the scrambled sessions were rearranged in proper order, we found that stage 1 scores were mainly grouped in the first 36 analytic hours; stage 2 scores bunched up between the 19th and 72nd sessions; stage 3 scores were concentrated between hours 73 and 108; and stage 4 scores fell in the last 18 sessions (Table 1). To determine the statistical significance of the ordering shown in the distribution, we computed Kendall's  $\tau^{20,21}$  for the relationship between bloc of sessions and scale score. Each scored instance of undoing has a particular level (1 to 4) and occurs in a particular bloc of sessions (1 to 6). If our hypothesis is correct, higher scores will be associated with later blocs. Kendall's  $\tau$  compares the score and bloc for each instance of undoing with the score and bloc for every other instance. For any two pairs of bloc (X) and score (Y), +1 is scored whenever X and Y are similarly ordered, and -1 is scored whenever X and Y are differently ordered. Cases of a tie in either variable are scored 0; and corrected formulas were applied to calculate maximum S and variance S in order to take into account tie scores. The obtained  $\tau$  of .65 is significant at better than the .001 level.

Thus, the distribution of scores was consistent with our expectations, and supports the thesis that the patient acquired progressively greater awareness of and control over his undoing defense during this period of analytic work. The results also suggest the continuity between the initially pathological defense as we have defined it and the emerging ego capacity to shift or not shift between alternative tendencies.

The first interpretation by the analyst of the undoing defense occurred in interview 61, and subsequent interpretations occurred in interviews 79, 86, 92, 94, 98, 99, 101, 103, 104, 105, and 108. The actual interpretation reflected our definition of undoing—the analyst would show the patient that he was turning away from one idea, when it was beginning to be uncomfortable, to an opposing idea. Some interpretations also exposed the idea that the patient believed that one tendency nullified another, eg, that feeling submissive cancelled out feeling stubborn. The patient moved from stage 1 to stage 2 *without* interpretation of the defense. We believe this change resulted from increasing confidence in the analyst which permitted him to relax his secondary defense and to tolerate experiences of mental confusion and inner contradiction. The change to stages 3 and 4, however, appear to have been dependent upon interpretation.

There is a significant degree of circularity in this demonstration that the undoing defense was integrated into

**Table 1.—Relation of Integration of Undoing Scores to Blocs of Psychoanalytic Sessions\***

Undoing Scale Score†	Sessions					
	1-18	19-36	37-54	55-72	73-90	91-108
1	3	6	0	0	2	0
2	1	5	2	4	0	2
3	0	0	0	1	4	8
4	0	0	0	1	0	5
Mean integration score‡	1.25	1.45	2.00	2.50	2.33	3.20

\* Cell entries show the number of interviews within a bloc of sessions receiving a given scale score.

† Kendall's  $\tau$  for the relationships between bloc of sessions and scale score is .65 ( $P < .001$ ).

‡ The mean integration score for a bloc of sessions is the mean score of instances rated 1 to 4; that is, scores of 0 do not enter this computation.

**Table 2.—Reliability Coefficients for Various Affect Measures\***

Scales or Measures	Raters		
	D With E	D With F	E With F
SD: strong dysphoric	.72	.85	.67
OA: strong nondysphoric	.92	.96	.96
CSA: combination of strong affects	.80	.87	.75
CAOpp: combination of opposite affects	1.00	.92	.92

\* All coefficients are fourfold point correlations based on 80 post-training sessions.

the ego as a control mechanism, because hypotheses and observations inevitably and appropriately interacted in the course of clarifying and refining our concept of integration, and developing the scale to assess it. We have conducted a careful, systematic empirical study of our thesis, not a formal testing of an hypothesis by independently specific measurements. We shall have more to say about methodological limitations after presenting the next phase of the study.

#### Undoing and Strong Affects

Clinical study of the first 110 sessions of the psychoanalysis of Mr. A. led to the formulation that during this period the integration of the defense of undoing enabled the patient to tolerate various strong affects. This clinical formulation is a specific instance of our general thesis that the integration of a defense during analysis gives the patient an ego-syntonic control to regulate the mental contents he had formerly warded off and thus makes it safe for the patient to experience these contents.

Although it is not customary to conceive of undoing as a defense against strong affects, this function of the defense may be readily understood. The defense of undoing attenuates affects because each incipient affect, connected to one action, idea, or attitude, is immediately cancelled by an opposite affect connected to the alternative action, idea, or attitude. For example, an idea connected to feelings of pride is immediately followed by an idea connected with feelings of humiliation, and so forth, and neither feelings of pride nor feelings of humiliation can develop

Affect Scales	Sessions					
	1-18	19-36	37-54	55-72	73-90	91-108
OA: strong nondysphoric	1	2	1	4	4	8
SD: strong dysphoric	2	4	6	9	3	4
ID: intense dysphoric	1	0	0	2	1	2
CSA: combination of strong affects	0	1	0	3	1	6
CAOpp: combination of opposite affects	0	0	0	2	4	5
W plus E: feelings of well-being (happiness, pleasure) or of excitement and enthusiasm	0	1	1	2	4	7

Fig	Variables	Kendall's $\tau^*$	Z†	P‡
2	HI and SD	.08		NS
3	HI and OA	.88	2.08	.025
4	HI and CSA	.72	1.67	.05
5	HI and CAOpp	1.00	2.37	.01
6	MI and SD	.41	.96	NS
7	MI and OA	.79	1.95	.05
8	MI and CSA	.79	1.95	.05
9	MI and CAOpp	.75	1.81	.05

\* Maximum S computed with revised formula to account for tied scores.

† Corrected for continuity and tied scores.

‡ One-tailed test of significance.

strongly. The discomfort associated with the unacceptable affects is the proximal cause of the unconscious shifting between opposing mental tendencies.

To examine the hypothesis that the integration of undoing enabled the patient to experience strong affects requires measures of integration of undoing, and of strong affects. The integration of undoing scale, in which higher scores stand for greater integration, provided two suitable measures: (1) mean integration (MI)—the mean of all scores 1 to 4 assigned within a bloc of sessions; and (2) high integration (HI)—the combined frequency within a bloc of sessions assigned either stage 3 or stage 4 scores.

A number of scales were developed to assess the patient's conscious, currently experienced, and acknowledged affects. The purpose of these scales was to permit reliable description of changes over time in the type, intensity, and variety of the patient's conscious emotional experiences. Clinical judgment and inference were deliberately minimized in developing scoring procedures, and the scales were restricted to those affective experiences which the patient directly acknowledged. We did not attempt to infer latent or un verbalized emotional currents, in spite of the obvious clinical importance of such affects, because our hypothesis concerned the very surface of the patient's emotional life—material emerging to consciousness and recognized by the patient. This obsessional patient's many statements about hypothetical affects were eliminated by

detailed scoring rules, so that the scale would identify only actual affective experiences. Memories of temporally remote affects were not scored.

Dysphoric affects such as anxiety, guilt, depression, and embarrassment were reported frequently by the patient, and as experiences ranging from mild to very intense. The D (dysphoric) scale scored such affects as mild (1), moderate (2), strong (3), and intense (4). Because of our interest in changes in the patient's capacity to tolerate *strong* affects, two derivative measures were used: (a) SD—strong dysphoric; all sessions within a bloc of sessions scored 3 or 4; and (b) ID—intense dysphoric; all sessions within a bloc of sessions scored 4.

Nondysphoric affects such as excitement, enthusiasm, pleasure, happiness, anger, etc, were reported relatively infrequently, and therefore were scored only for presence-absence. The few weak or ambiguous instances of these affects were eliminated by scoring criteria so that intensity scores would not be required. For purposes of statistical analysis, we combined the various strong nondysphoric affects into a single OA (other affects) scale.

We were also interested in changes in the patient's capacity to tolerate a wide range of emotional experiences, and derived two measures relevant to this aspect: (1) Combined Strong Affects (CSA), to be scored for the presence of two or more *different types* of strong affects in a single session; and (2) Combined Opposite Affects (CA, Opp), to be scored for the presence of opposing affects (eg, depression and enthusiasm, or anxiety and pleasurable excitement) in a single session.

Three new judges (a psychologist, a psychiatrist, and a housewife) were selected and trained and then rated 80 sessions presented in random order (with no clues as to whether the session was early or late) for various affects. The task was relatively straightforward after training, often requiring the most minimal judgment. Interjudge reliability coefficients ranged from adequate to perfect (Table 2).

The distribution of various affect measures during this phase of the analysis is shown in Table 3. The statistical significance of the relationships between the integration measures and the affect measures are shown in Table 4. The measure of relationship used was Kendall's  $\tau$  which was discussed in the preceding section. There was a statistically significant relationship between both integration of undoing measures and the emergence of strong nondysphoric affects; the presence of more than one type of strong affect in a session and the presence of opposite affects in a session.

There was not a statistically significant relationship between the integration of undoing measures and the emergence of strong (ie, rated 3 or 4) dysphoric affects. Rather, strong dysphoric affects increased through the first four blocs of sessions, but then decreased—in contrast to our theoretical expectation. However, when we consider only the most *intense* dysphoric affects (those rated 4), we find that five of the six instances occurred in blocs four through six, in association with increasing integration of undoing. These somewhat contradictory findings may be reevaluated in terms of our more detailed clinical formulations about the therapeutic process. As the patient devel-

oped some security in the analysis, he began to expose his stubbornness and to experience anxiety and guilt about this; as he became more aware of his conflict over stubbornness, anxiety and guilt diminished, and he felt more comfortable overall. Against this background of a rise and fall in feelings of guilt and anxiety, the patient acquired the capacity to tolerate intense affects (of all kinds) as he integrated the undoing defense. Thus, although there were fewer instances of strong dysphoric affects in the later sessions because of an increase in the patient's comfort, there were nonetheless *more* instances of *intense* dysphoric affect, because of an increased capacity to tolerate them. This explanation corresponds with our understanding of the material, but the findings were not anticipated by, and in part are an exception to, the original hypothesis. The overall findings, with this exception, are consistent: most of the patient's affects increased, and the range of his emotional experience widened, at the same time as the undoing defense was integrated. We may consider alternative explanations as well as a number of methodological issues in the concluding section.

### Comment

The observed covariance between changes in the patient's defense of undoing and the emergence of strong affects does not of course demonstrate a causal relationship. Two other types of explanations of the results may be considered.

It is possible that there is a causal relationship between the variables, but that the effective sequence is opposite to that hypothesized; specifically, the appearance of strong affects might have caused an intensification of the patient's defense of undoing, and thus made the defense more manifest to the patient. From this perspective, the patient has not acquired a new control which makes it safe for him to experience strong affects, but has instead experienced a breakthrough of strong affects, which in turn modified the defensive process. This breakthrough model may be made more plausible by assuming that over this period of analysis the transference intensified, mobilizing strong affects, which in turn required new or intensified defensive efforts. Stage 3 then, in which the patient became aware of his tendency to shift from one idea or train of thought or action to its opposite, might reflect the patient's awareness of a now more prominent defense.

The breakthrough model cannot be refuted, but provides a less satisfactory account of all of the data than the integration-regulation hypothesis. First of all, the patient's affects do not suggest a breakthrough and an intensification of defense: there was some decline of anxiety and dysphoric affects, and an increase of feelings of excitement, enthusiasm, and well-being (Table 3) at the time when undoing was being modified. Further, the breakthrough model does not account for the steady progression of stages in the integration of undoing, and the striking coincidence between the appearance of stage 4 in the last 18 sessions, and the surge of strong affects at that very time. It may be recalled that stage 4 designates awareness of control of shifting—ability to shift deliberately, or to refrain from shifting—rather than any phenomenon

which can be conceptualized readily as intensification of defensive efforts.

A second type of alternative explanation is that both variables changed during this period of analysis, but that there was no causal link between them. Specifically, strong affects might have increased during this first period of the analysis because of the patient's increased trust in, comfort with, and transference feelings toward the analyst. The change, in this view, was not a breakthrough, but a gradual natural opening-up associated with the development of an enduring relationship. Simultaneously, the analyst directed his interpretative attention to the undoing defense, which therefore coincidentally underwent the observed changes while affect was increasing. The observed covariance was a byproduct of other processes, and not in itself significant. From this perspective, the integration-regulation hypothesis is an overelaborate account of a basically ad hoc finding.

The present data cannot help us select among these alternatives, and the argument for the integration-regulation hypothesis must rest for now on the grounds that it is not simply an ad hoc explanation of a particular finding, but a theoretical position derived from a number of clinical observations, and consistent with general psychoanalytic assumptions. However, in the absence of experimental control of variables, we have no certain way of choosing among alternative explanations of observed covariances. We cannot hope to achieve direct experimental control but may reasonably seek to isolate causal sequences by replication studies. Successful replication of the hypothesized relationship between integration of a defense and the emergence of warded-off contents—across patients, defenses, and analysts—would greatly strengthen the credibility of the hypothesis, and would correspondingly reduce the credibility of explanations which seem plausible in regard to (only) one particular observed change.

The basic data for the present study were process notes, which are liable to two important objections. First, such notes provide an indeterminately biased sampling of the events which occurred during the analysis; thus, findings based on the notes might change or vanish if we had before us a more complete and accurate record. This objection is unanswerable in the present study. In work now underway, we are tape recording an analysis to provide an opportunity to check findings based on process notes against the more complete record. We have begun to study the relation between process notes and tape recordings in the new case, and have the preliminary impression that the notes capture well the major trends—an impression similar to that reported by Knapp et al.<sup>22</sup>

Second, process notes might so condense the analytic material as to provide too filtered or abstract a basis for adequate detection of the play of dynamic processes. In the present instance, we have not experienced this liability, and have found it possible to follow in vivid detail the dynamics of the patient and the course of the treatment. The adequacy and accuracy of the data base may nonetheless be questioned in the absence of tape recordings. We discussed earlier the compelling practical and strategic reasons for using process notes at this stage of our re-

search, in spite of their limitations. We consider it an important step to have found orderly relations between complex processes within the microcosm of process notes, even though these relationships must be investigated with more complete data in replication studies.

This study was to some extent circular, in that findings derived from clinical induction were then investigated as hypotheses on the same material. Similarly, the measures used were ad hoc. Scales were developed from Mr. A's case material and then applied, by independent judges, to the same material. There was no simple alternative to this approach if we were determined to pursue the research problem which concerned us. Our task required the identification of *case-specific variables* (here, the undoing defense and strong affects) relevant to our hypothesis, and then the development of *case-specific measures* of these variables. Replication studies on new cases will not in themselves answer this measurement problem because we anticipate the need to once again tailor the measures to specific features of the individual case. Such measures lack independence, and we might arbitrarily devise scaling criteria so as to confirm our hypothesis. For example, we might "prove" that a defense had become integrated by choosing manifestations for each stage of integration in such a way as to support this thesis. We have been developing methods of control for this problem which will enable us to study constructs such as defenses, which have different surface manifestations in each case, with measures which nonetheless have some generality and independence. One method asks independent professional judges to assign scrambled, case-specific manifestations of a defense to the appropriate stage on the basis of general, theoretical definitions of the four stages of integration. This procedure assures that scaling, while still individualized, is not subjective and arbitrary, but fits rational general definitions of our concept of integration. A second method involves the use of prediction: The research group specifies in advance, on the basis of case material from early sessions, just what observable phenomena will be taken as evidence that a particular defense in the given patient has, or has not, become more integrated.

The significance of the line of work we have undertaken warrants equal consideration to that given the methodological difficulties. Psychoanalytic paradigms about the therapeutic process are powerful and clinically relevant, but have not ordinarily been explicit enough, or linked in a simple enough way to observations, to permit close, rigorous empirical study. We have taken a central aspect of psychoanalytic theory about the therapeutic process—the relationship between defense analysis and the emergence of warded-off contents—and have devised a model which is explicit enough to allow consideration of how it might be tested. The actual testing of the model involves a number of steps and a number of possible sources of bias or error which need to be overcome; but a general approach to close study and testing of the model has been adumbrated in this report. We have also described stages in the integration of a defense, and have documented that the observations on which those stages are based may be made with high intersubjective agreement. As noted earlier, there is no previous account (except by Weiss<sup>10</sup> of our re-

search group) either within or outside of psychoanalytic literature describing stages in the modification of a defense during a therapeutic course.

It has been difficult for psychoanalysis to combine great rigor in research methods with the complexity of its explanatory concepts, and as a consequence psychoanalysis has not participated as fully as other theoretical orientations in contemporary objective research on therapeutic processes.<sup>23</sup> This relative lack has been a detriment to psychotherapy research as well as to psychoanalysis itself. In our view, research on the psychoanalytic process should proceed by the *explication* of models or "mini-theories" to account for particular sequences of observations, or aspects of complex treatment situations, and then by the stepwise testing of these models by intersubjectively reliable observations. Studies of this kind, which attempt to combine theoretical complexity, clinical relevance, and a commitment to empiricism, are the only way in which powerful psychoanalytic paradigms about therapeutic change, not encompassed within other theories, can be explored and can contribute to what will eventually be our common scientific understanding.

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