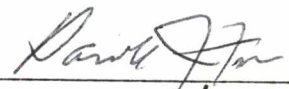
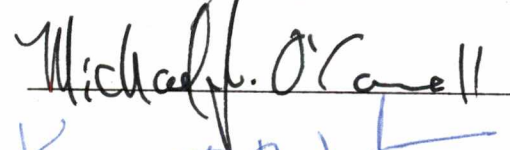


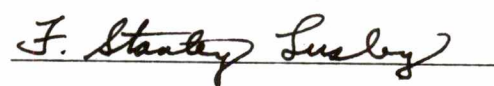
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I am submitting herewith a dissertation written by David H. Mindes entitled "The Phenomenon of Splitting in Normal Populations." I have examined the final copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in Psychology.

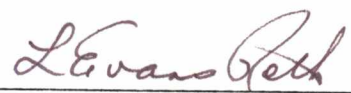

Leonard Handler, Major Professor

We have read this dissertation
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THE PHENOMENON OF SPLITTING IN NORMAL POPULATIONS

A Dissertation

Presented for the

Doctor of Philosophy

Degree

The University of Tennessee, Knoxville

David H. Mindes

March 1983

3066000

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ABSTRACT

The purpose of this study was to investigate several areas of controversy in the current psychoanalytic literature on the defense mechanism of splitting. The specific issues which were explored included: (1) if the defensive use of splitting is seen only in primitive disorders or if it is more universal in nature; (2) if splitting occurs following object integration and the development of the repressive barrier; (3) if the activation of aggressive drive derivatives constitute the necessary and sufficient conditions for the subsequent act of splitting; and (4) if splitting consistently occurs in the context of a constellation composed of object representations, self representations and linking affects.

Forty-eight subjects were seen for two sessions in a balanced design. In one session, subjects received four subliminal tachistoscopic exposures of a neutral stimulus message. In the other session, subjects received subliminal exposures of a "critical" stimulus message, designed to stimulate either aggressive drives, libidinal drives, symbiotic drives or conflicts over the loss of symbiotic union. A third set of exposures of the same critical message presented superliminally followed. After each of these three sets of exposures, subjects rated both themselves and their mothers on an adjective checklist.

The major results were that splitting was found to be induceable in normal, object-integrated subjects. Splitting was not found to be "replaced" by repression, nor was the experience of being split

"mitigated" by repression. Aggressive, libidinal and symbiotic drive stimulation was found to produce splitting. The obtained splits occurred in either self or object representations but not necessarily in both.

It was concluded that splitting does occur throughout a range of pathology and is an active mechanism in normal populations. A distinct form of "normal" splitting was identified in this study. Three additional forms were discussed. An epigenetic relationship between the various forms of splitting, developmental levels in which each occur, boundary development and the defensive aims associated with each form of splitting was proposed by the author.

TABLE OF CONTENTS

CHAPTER	PAGE
INTRODUCTION	1
1. REVIEW OF THE THEORETICAL LITERATURE ON SPLITTING	6
2. REVIEW OF EXPERIMENTAL APPROACHES TO THE STUDY OF PSYCHOANALYTIC THEORY	39
The Subliminal Psychodynamic Activation Method	45
3. HYPOTHESES	59
4. METHOD	64
Subjects	64
Apparatus	65
Priming Intervention Stimuli	66
Stimuli	67
Data Collection	68
Procedure	72
5. RESULTS	81
6. DISCUSSION	96
REFERENCES	116
APPENDIXES	125
A. PRIMING INTERVENTION STIMULI	126
B. ICL FORMS	128
C. INFORMED CONSENT FORM	132
D. SUMMARY OF MENTAL STATUS EXAMINATION AND PSYCHIATRIC HISTORY AND CRITERIA FOR SUBJECT EXCLUSION	133
E. DISCRIMINATION TASK SCORING SHEET	135
VITA	136

LIST OF TABLES

TABLE	PAGE
1. Condition Assignments for the Groups	73
2. Summary Flow Chart of Procedures and Data Collection	80
3. Mean Difference Scores and Standard Deviations for Splitting Effect (E-C)	82
4. Wilcoxon Signed-rank Test Comparisons for Splitting Effects; T Values and Associated Probabilities	83
5. Point-Biserial Correlation Coefficient (r_{pbi}) Comparisons of Defensiveness to Responsivity by Groups	86
6. Wilcoxon Signed-rank Test Comparisons for Differences in Identification between Mother and Self for the Critical and Control Stimulation Phases	88
7. Wilcoxon Signed-rank Comparison of Splitting Effect for Supraliminal Stimulus Presentation versus Control ICL Ratings and Associated Probabilities	91
8. Wilcoxon Signed-rank Comparison for Splitting Effect under Supraliminal Conditions, Supraliminal versus Control Sessions, for Responders and Nonresponders	93

INTRODUCTION

The first hundred years of psychoanalysis has been the history of the mechanisms of repression and displacement. In the second hundred years it will be a history of splitting and projective identification.¹

With the increasing interest in Pre-Oedipal disorders, particularly the narcissistic and borderline disorders, and the ever expanding body of knowledge regarding object relations theory, the psychoanalytic community has become aware of specific mechanisms of defense which differ from those traditionally seen in the neurotic disorders. The most elusive of these is the mechanism of "splitting."

In its current use, "splitting" refers to a basic psychic mechanism which impacts on perceptual, organizational, cognitive and defensive operations. Kernberg defines splitting as "the active process of keeping apart introjects and identifications of differing qualities" (1976, p. 29). Clinically, he states, splitting is seen typically as "a division of external objects into "all good" ones and "all bad" ones, with the concomitant possibility of complete, abrupt shifts of an object from one extreme compartment to the other; that is, sudden and complete reversals of all feelings and conceptualizations about a particular person. Extreme and repetitive oscillation between contradictory self concepts may also be the result of the mechanism of splitting" (1976, p. 29).

¹James Grotstein, Splitting and Projective Identification (New York: Aronson, 1981).

The aim of this defense is the reduction of anxiety generated out of an inability to integrate libidinally and aggressively determined internalized object representations, including the self representations. Kernberg (1976, 1977), Mahler (1971), Lichtenberg and Slapp (1973), Lustman (1973), Chessick (1977), Blanck and Blanck (1979) and Volkan (1976) all suggest that this anxiety is due to a threat to the ego's core, composed of "good internalized representations," when confronted with "bad object representations." The goal of splitting is to keep good and bad representations separate and protect the "pure" ego core from contamination.

Although a more complete description of the various theories of splitting and its development, function and impact on the individual will be presented in a later chapter (see Review of Theoretical Literature), it is sufficient for the present to note that several difficulties have been cited in the literature regarding the concept of splitting. Among the issues at dispute is the question of what is split in splitting. Various answers to this question include: the ego is split, one's attitudes are split, representations are split and nothing is split. Closely related to this issue is the question of whether splitting actually "splits" anything; that is, whether splitting actually separates anything. Some critics of this notion (esp. Pruyser, 1975) suggest that nothing is actually split in splitting, for everything which is said to be "split" was separate prior to the use of splitting.

Recently, splitting has been considered in a manner which regards it as a developmental milestone, a forerunner of discrimination. This position is most clearly supported by Mahler (1968). Additionally, the psychoanalytic concept of the "purified ego" or "all good ego core" depends on the keeping of positive and negative introjects separate; as such, splitting constitutes a necessary precondition for ego development. This leads to the question of whether splitting is a developmentally acquired, phase appropriate mechanism or a defensive mechanism.

The most obvious answer to this question is that a "cutting" line exists in development beyond which splitting is seen as pathological. Kernberg (1977) suggests that this line is the development of the repressive barrier occurring at around 36 months. Mahler (1968) sees the line as the development of object constancy, also occurring at about 36 months. Following these authors' time frames, one would assume that splitting would not be seen in the normal or normal-neurotic individual. Kernberg (1976) states this specifically. Yet others (Ross & Dunn, 1980; Grotstein, 1981) claim that splitting can be seen across pathologies and in the normal population as well. This leads to the question of whether object constancy is the cutting line between a developmentally appropriate process and a pathological defense. Put in different terms: does the normal individual engage in splitting?

Theories regarding the etiology of splitting can be grouped into two major divisions. The position held by the Ego psychologists and more classical analysts is represented by the work of Kernberg (1976, 1977). Simply put, splitting is seen to result from the inability to

integrate and modify libidinally and aggressively determined object representations (Volkan, 1976, p. 267). Yet when one looks closer at the theory it is not the inability of integrating both drive determined representations that results in splitting, but rather, the inability to integrate aggressively determined representations into the "purified, all-good ego prestructure." Kernberg states specifically that splitting is due to "an inability to neutralize aggression" (1976, p. 45). While this may appear to be a small point, it becomes critical in comparing this more classical understanding to the object relations view represented by Fairbairn.

Fairbairn (1946, 1963) sees splitting as the separation of objects into essentially three categories, those which excite (libidinal), those which frustrate (antilibidinal or aggressive) and those which satisfy (idealized). Each of these splits in object representations has a cathected ego part associated with it; the libidinal ego, the antilibidinal ego and the central ego, respectively. With the splitting off of the exciting and frustrating objects, their corresponding egos are also split off from the original unitary ego and are repressed by the conscious central ego. Although Fairbairn's theory is not rooted in traditional drive theory, he does point out that libidinal as well as aggressive object qualities can lead to splitting. This leads to a further issue. Is splitting a result of an inability to tolerate aggression solely or an inability to tolerate both aggression (frustration) and libidinal (exciting) qualities?

Pruyser (1975), after reviewing the literature to date on the topic of splitting suggested that "both the term and concept be banned from the psychological vocabulary" (1975, p. 44). He cites four objections to the concept: (1) splitting is a "tricky and loaded term," (2) it refers to the concept of space and distance, both of which he sees as not applicable to psychic functioning, (3) it implies an actor who does the splitting and an object of the splitting, "both unnamed and unclear," and (4) "that neither did we find evidence that anything alleged to be split really became split, for all the items mentioned had already been split before" (1975, pp. 43-44). He concludes that splitting is a process in which "some splitter does the splitting and whatever becomes split 'splits'" (1975, p. 44).

While Pruyser's objections are overstated, he does point out the confusion regarding the mechanism of splitting. Still, the clinician dealing with the borderline or schizophrenic patient observes the rapid vacillation with which they view themselves and others. Rather than abandon the concept of splitting, these issues should be explored with the goal of clarifying this important, albeit, convoluted concept. Before entering into a consideration of these current difficulties in more detail, a review of the historical and contemporary theories underlying splitting is in order.

CHAPTER 1

REVIEW OF THE THEORETICAL LITERATURE ON SPLITTING

The concept of splitting has received renewed attention in recent years, especially so in light of the expanding body of knowledge regarding the borderline personality. Yet, splitting remains a confused and confusing concept in psychoanalytic writings, owing to the fact that two or more differing phenomena are being referred to by this single word. Lichtenberg and Slapp (1973), in a review of the mechanism of splitting, point to the origins of this notion in the writings of Freud.

As early as 1893, Freud, Breuer, and Janet were investigating the "loss of associational processes" often seen in hysteria. In this regard, Freud first used the concept of splitting to refer to a "splitting of consciousness," that is the "separation of a group of attitudes from the dominant mass of ideas" (1893, p. 45). The motive for this splitting was two-fold. First, it represented the counterpart of synthesis, the breaking of connections. Secondly, Freud suggested that once the associational connections were broken, the now alien attitudes could be removed from consciousness. Splitting in this sense was used to denote a basic division of psychic processes; the conscious and the unconscious. As Freud's work with hysterics continued, he noticed that these alien attitudes were not randomly split off from consciousness. With his hysterical patients, Freud noticed that sexual thoughts and fantasies were split off from consciousness. He postulated a process of

"selective forgetting," in which the associational connections, particularly in reference to sexual material, were broken. Used in this manner, Freud (1917) appears to be referring to splitting as a mechanism of repression.

During the 1920s, Freud enlarged his theory of splitting to go beyond the notion of repression and include its functioning in creating ego structure. Continuing to work mainly with hysterics, Freud noticed that this "incompatibility of ideas" was generally associated with opposing aims of instincts; particularly the ego instincts of survival, functioning according to the reality principal versus the libidinal instincts functioning under the pleasure principle. The symptom of the hysteric was seen as an ego compromise of providing secondary gains for libidinal instincts seeking gratification while meeting the ego's demands to deny direct gratification in accordance with the reality principal. In this, the ego is seen as splitting consciousness, the ego splits ideas and affects which are incompatible with other ideas and effects associated with the reality principle in the attempt to maintain homeostasis.

Freud's concept of splitting up to this point was formed during his work with neurotic patients. Splitting was seen as serving to basically separate opposing ideas by retaining one in consciousness while the other becomes unconscious. As Freud began his work on fetishism (1938), his use of the term splitting shifted to a model which attempted to explain the development of contradictory psychic grouping observed as "a contradiction between observation and preconception." This he explained

as "splitting of the ego in order to avoid a total rupture" (1938, p. 143). The real shift in the use of the term splitting is that when formally used splitting referred to the maintenance of one contradictory idea or association in consciousness while the other was removed from consciousness, while in this later formulation both contradictory ideas are held in consciousness and the ego is split. This is illustrated in the symptom formation of the fetishist. The formation of such symptoms is seen as beginning when the male child sees the female and first notices her lack of a penis. This discovery leads to a castration fear which is quieted by the development of a fetish object which becomes a substitute for the lost penis of the woman. This fantasy confirms the child's wishes for everyone to have a penis, which in turn, affirms the existence of the child's penis, thus reducing the child's castration anxiety. In this symptom formation, the child attempts to deny anatomical differences between the sexes. Yet, in this attempt at denial and the subsequent formation of the fetish object, the reality of the anatomical differences is affirmed. A similar mechanism was also seen in psychoses in which the individual incompletely withdraws from reality. Freud conceived of this as though the psychotic were composed of a "normal" and a "pathological" person which exists simultaneously within the same person with "the normal person hidden . . . like a detached spectator" (1940, p. 275). In his later writings (1938) Freud reviewed his earlier concepts of splitting and enlarged upon them to represent an overall organizational process in which opposing attitudes are dealt with. In this model, Freud (1940) proposed the notion that

contradictory ideas, such as might arise between the id and the ego amounts to a threatening situation and in order to handle this situation, the id impulse is repressed, both split out of consciousness and split off from the available associational processes.

Thus Lichtenberg concludes that Freud used the notion of splitting in four distinct ways: (1) as the opposition of synthesis, (2) as an organizational process, (3) as a mechanism of defense, and (4) as the process of the formation of contradictory psychic groups. It would appear that much of the controversy over the concept of splitting is reflected in the multiple forms of splitting which Freud posited. The four notions of splitting appear to be reducible to two major forms, splitting as a defense and splitting as a factor in infantile development.

The work of Otto Kernberg on the borderline condition and pathological narcissism appears to constitute a further development of Freud's later theory of splitting. Kernberg's model of ego development is one which begins with the assumption that there is no ego present at birth. Rather the infant is born with an undifferentiated ego-id matrix with apparatuses of primary autonomy, namely memory and perception (1975) and innate libidinal and aggressive instincts. Ego as structure does not begin until "introjections are used for defensive purposes, specifically in the early defensive organization against overwhelming anxiety" (1976, p. 36). Such a defense occurs when introjects with differing affective valences are split from each other in order to protect the integration of the positive introjections which come to form

the "primitive ego core." Thus, the first ego state of the infant is one in which good internal objects and good external objects (at the level of undifferentiated self object representations) constitute the earliest defensive organization of the ego, "the purified pleasure ego." In this ego, all negative introjects associated with tension are ejected.

Kernberg sees three major phases of ego development, the first being the ejection of negative introjects, the second being the differentiation of good and bad object representations (still split according to aggressive and libidinal qualities) and the third being the integration of self images associated with libidinally and aggressively determined drive derivatives and a similar integration of good and bad object images.

The development of introjects can be seen as underlying much of Kernberg's theory of splitting. Introjects develop out of the infant's need to interact with the "outside world," although the concept of outside has not yet developed. In the event that the interaction is pleasureable, satisfying or tension reducing, the memory of the interaction, its affect and the self-object image will become associated with libidinally determined drive derivatives. If, on the other hand, the experience is frustrating and anxiety provoking or nontension reducing, it becomes associated with aggressive drive derivatives, thus setting the stage for two sets of memory traces, the "good" self-object representations and the "bad" self-object representations. Initially, as mentioned, only "good" representations are introjected while the bad

representations are ejected. This eventually leads to the differentiation of the "me" (good self-object representations) from the "not-me," occurring about three months of age. Briefly, the next developmental phase, identification, begins between 8 and 10 months of age and is completed by 18 through 36 months. In this phase, the infant begins differentiating the "self" from "objects," particularly seen in the differentiation of the "self" from the "mother," in line with physical body limits. This differentiation is still predominated by the affective drive determined derivatives. That is, the differentiation continues to be colored by "good" and "bad" distinctions, presumingly giving rise to the "good self-bad self and good object-bad object." This is followed by an integrative stage from about three years continuing through latency, in which good and bad object representations merge to give rise to whole object and self representations.

Kernberg's notions about splitting can be roughly divided into those relating to normal development and those relating to defensive functioning. In early development, memory traces are developed along the lines of pleasure versus displeasure, tension reduction versus tension. This, Kernberg sees as a quite normal event due to the infant's limited perceptual abilities and a natural polarity of the libidinal and aggressive drives. In this state nothing is really split; the judgments which the infant makes are along the only perceptual lines available to it. At this stage, Kernberg would suggest that an ego as such does not exist, hence the splitting of an ego at such a stage would not be possible.

Kernberg states that splitting as a defense "referring only to the active process of keeping apart introjections and identifications of opposing qualities" (1975, p. 29) begins at about 3 months of age reaching its zenith between 6 and 12 months and disappearing during the early third year of life. At this stage, the developing ego, in order to maintain its integrity and avoid the anxiety that bad objects will destroy good objects, splits in its own defense. Such a split, although not specifically stated by Kernberg, must occur within ego functions such as memory and perception. The defensive use of the term "splitting" can only be applied after object integration has occurred. This process begins at about 36 months of age and continues through latency (Kernberg, 1975, p. 69). At the same time, ego and id begin to differentiate, leading to the development of an ego proper as well as the development of a repressive barrier. Yet Kernberg states, "The crucial intervention of the mechanism of splitting occurs before the self has differentiated within the ego, so that that which is split is the ego. Later, when the self has consolidated into a definite structure (a substructure of the ego), what is typically split with the excessive use of this mechanism is the self and no longer the ego" (1976, p. 45).

What splits in Kernberg's system is first nothing, then an ego before it fully exists and finally the self at a point when one can speak of the establishment of the ego proper, including the substructure of self.

Mahler's theory of splitting is largely embedded in her research in child development, particularly during the separation-individuation process occurring during the first three years of life. The first stage in development is the autistic stage, in which the world is objectless and no differentiation between self and others exist and the infant is only capable of distinguishing between pleasure and frustration. Mahler states that this stage "seems to be the first quasi-ontogenic basis for the later splitting mechanism" (1975, p. 43). This phase is followed by the Symbiotic phase, occurring between two and five months of age. In this phase the infant becomes aware of a defused someone who provides for his¹ needs in the context of the symbiotic orbit. In this phase, no self-other differentiation exists, only the development of memory traces which eventually develop into the concept of "good" and "bad" mother, that is, memories of pleasure or frustration.

Separation and individuation begins at approximately 4 to 5 months, in which the child "hatches" from the symbiotic orbit. The infant at this stage becomes more alert and interested in the world. Such an interest is seen as marking the beginnings of a differentiation of self and others. This is followed by the Practicing subphase in which the infant has "a love affair with the world" (Mahler, 1975). In this phase the infant develops intense curiosity about the external world and its growing physical abilities.

¹The terms "his" is employed for reasons of literary convenience and refers both to males and females.

Following this phase is the Rapprochement subphase in which the infant realizes his separateness from the mother. Beginning between 15 to 24 months, the infant is seen as entering a stage of great confusion about the world. Having lost the symbiosis, the infant utilizes splitting to organize his perceptions. No longer one with the mother, the infant sees a good mother who meets needs and a bad mother who frustrates them. Mahler emphasizes the importance of maternal constancy during this period as a means by which the polarities of the good mother and bad mother are neutralized fostering integration and a development of object constancy. If such constancy is not available from the mother and the experience of frustration is too extreme, splitting will predominate and integration will not come about, contributing to future psychopathology, including borderline conditions.

Although Mahler's work in relation to splitting is often vague, owing to its embeddedness in her presentation of early child development, two important features are worth noting. First, Mahler places the time of splitting at an age much earlier than Kernberg does. Equally important is the concept of what is split. From Mahler, it is the infant's attitude which is split. In contrast to Kernberg, Mahler specifically sees the split as being in part due to the lack of synthetic functions within the young ego. This split is not a split of the ego per se. Further, Mahler (1975) sees the eventual synthesis or integration of the all good and all bad as the function of a "growing ego" and its developing synthetic capabilities. This implies that

splitting in the infant is less a defense than a developmental state reflecting a level of immature ego growth.

Stolorow and Lachmann (1980) present a view of splitting which is closely linked to the views of Kernberg (1975, 1976) and Mahler (1975). Splitting is seen as a process "whereby object images with opposing affective colorations are forcibly dissociated or experientially kept apart in order to alleviate intense ambivalence conflicts" (1980, p. 95). They suggest that splitting, like most primitive defense mechanisms, is actually a fantasy which aims to distort aspects of the internal world which are linked to conflictual material.

Since these authors are primarily interested in developmental arrests in relation to psychopathology, they stress the need to differentiate between "prestages" of splitting, that is, developmentally appropriate splitting on one hand and defensive splitting on the other hand. Here, the question of object integration becomes critical to this distinction. If integration has occurred in a given patient, then the use of splitting may be considered defensive in nature. Yet, these authors do not believe that the assumption of prior integration "is warranted a priori in every borderline case" (1980, p. 98). In the case that such an integration had not formerly occurred, Stolorow and Lachmann maintain that what is seen as splitting is actually a reflection of a developmental arrest at a "prestage of this defense" (1980, p. 98).

A means of distinguishing between these two forms of splitting is presented by these authors. They suggest that splitting which takes the

form of "fluid, rapid alternation of contradictory images in connection with the same external object" (1980, p. 98) is suggestive of a developmental arrest in the ability to integrate representations with contrasting affective coloration. Defensive splitting would be reflected in circumstances in which "all-good" and "all-bad" images are "rigidly linked to two or more separate external objects" (1980, p. 98). Examples of this form of splitting would be idealized or devalued transferences.

In his 1971 work, The Analysis of the Self, Kohut refers to two forms of splitting, the vertical split and the horizontal split. The former is seen as "a specific, chronic structural change. . . . The ideational and emotional manifestations of the vertical split in the psyche, in contrast to such horizontal splits as brought about on a deeper level by repression and on a higher level by negation . . . are correlated to the side by side conscious experience of otherwise incompatible psychological attitudes in depth" (1971, pp. 176-177).

The vertical split, therefore, is of the kind referred to by most authors who employ the terms splitting. It is the vacillating part-object part-self representation organized along "good"/"bad" lines. Kohut is rather vague about which lines these splits are organized along, preferring to conceptualize in his "Self Psychology," split extremes of self-grandiosity or self-deprecation.

The horizontal split constitutes the second form of splitting which Kohut notes. In this form, disavowal is the aim. Splitting, in this form, involves the "expulsion" from consciousness of that which is split-off, be it by repression, undoing or negation (1971, p. 109).

Fairbairn's contribution to the concept of splitting is based in his breaking away from instinct theory and focusing on object relationships as a basis of personality development. Within this system, Fairbairn postulates an ego, the "pristine ego," which is present at birth. The ego, by nature, is object seeking. Libido is seen as a function of the ego, not as instinctive. Given the fact that the ego is object seeking, the most fundamental anxiety of the infant is that of separation from objects. The ego reacts to such separation and its concomitant frustrations and deprivations via aggression.

The original defense mechanism which a child has to deal with unsatisfying relationships is that of internalizing the aspects of the object which are unsatisfying, particularly the exciting and frustrating aspect. This process of internalization involves the formation of mental representations of the object, which are subsequently split into exciting (libidinal object), rejecting (antilibidinal objects) and the central core of the (idealized object) ego. The exciting and rejecting objects are repressed, but with them parts of the ego are also repressed owing to the original ego's cathexes towards these objects.

The mechanism of the repression is basically simple. As the object is incorporated in order to remove its unsatisfying aspect from the external world, the bad objects come to populate the inner world. In an attempt to deal with this, the infant splits all the bad qualities, i.e., the exciting and frustrating qualities, off from the object representation and removes them from consciousness.

As these aspects of the object are repressed, parts of the original unitary ego are also repressed. The ego parts associated with the exciting, longed-for object become the libidinal ego; the part cathected to the frustrating object form the antilibidinal ego while the idealized object stays in consciousness, leaving with it the central core of the ego. The central ego, now attached to the idealized object, serves as an agent of the repression of the libidinal and antilibidinal egos. Although the integration of these egos comes about later and is necessary to form the "true self," the mechanism of this integration remain largely undescribed by Fairbairn.

Splitting, for Fairbairn, is a complex matter. It is first the splitting of objects into the exciting and frustrating aspects. It is also the splitting of an ego via the cathexes the ego has formed with these aspects. Thirdly it is the splitting of conscious content out of consciousness, Kohut's horizontal splitting, in the development of repression. Employed in this system, splitting is one at the same time a mechanism of development, a defense and a mechanism of differentiation. In as much as frustration is inevitable for the infant, splitting is seen as equally inevitable.

Klein (1975a, 1975b) begins her theory by postulating an inborn ego and the existence of life and death instincts, with the life instinct forming the energy source of the ego. For Klein, the primary anxiety a human faces is the fear of annihilation and death arising from the death instinct. Hence, the battle between life and death begins at birth.

The fear of the ego annihilation forces the ego into defensive action, particularly projection, introjection and splitting.

The infant under fear of the death instinct and the resultant anxiety, projects this death instinct onto an external object in order to reduce the annihilation anxiety. Yet this solution creates a new difficulty, the object (or part object) on to which the death instinct was projected now becomes a feared external object. To cope with this new fear, the infant incorporates the feared object. Notice that the incorporation is of an object and is not the incorporation of the death instinct per se.

Klein's notion of positions are of particular interest here, as her concept of the paranoid-schizoid position underlies her notions of splitting. The paranoid-schizoid position, lasting between the first and third months of life, is marked by the presence of object splitting, part objects, persecutory anxiety and a lack of integration in ego functioning. In this period the death instinct is projected, and then incorporated as an object. In order to deal with this incorporated object and make sense of his internal chaos, the infant splits part objects into "good" objects, associated with the life instinct and "bad" object associated with the death instinct. The original split is presumed to be between the "good" breast and the "bad" breast. This splitting serves two functions. First it removes the confusion of opposing instincts and secondly it keeps "good" and "bad" objects separate. Klein (1975) sees splitting as necessary during this phase of development, as splitting lays the foundation for later discrimination

as well as the abilities to focus attention and forestall action while thinking.

Such splitting is seen by Klein as including the splitting of not only objects but also of the ego. She states, "I believe that the ego is incapable of splitting the object without a corresponding splitting taking place in the ego. Therefore, the fantasies and feelings about the state of the internal object vitally influences the structure of the ego" (1975a, p. 6). In this light, splitting refers to the separation of objects into "good and bad," the separation of emotions associated with these objects and finally, a split in the ego itself.

A second form of splitting is seen by Klein in normal development, namely in a development of the superego. In this process the ego projects a portion of the death instinct onto itself and this is then split off from the ego to become the superego. This split off portion of the ego merges with a part of the life instinct which results in both "good" and "bad" aspects of the superego (similar to "ego ideal" and "sadistic superego"). Although the method of splitting is similar to that of the paranoid-schizoid position, it is the ego itself which splits itself.

Rosenfeld's conceptualization of splitting is based in the developmental schemata presented by Klein. Like Klein, Rosenfeld distinguishes between splitting in its normal or phase appropriate forms and its abnormal form. "Normal" splitting, occurring at its zenith in the paranoid-schizoid position, is seen as functioning as a tool for differentiation between libidinal and aggressive impulses and the

objects of these impulses; i.e., the "good" and "bad" breasts. In addition, splitting aids in the distinction between internal and external, real and symbolic and between objects themselves. Each of these functions occur within a developmental framework and are, essentially, mastery oriented.

Abnormal splitting is a process which leads to fragmentation rather than to differentiation. Rosenfeld refers to this form of splitting as "secondary splitting" (1950, p. 135). The driving force behind this form of splitting is the excessive destructiveness of the individual, coupled with a tendency to utilize projective identification. For the psychotic, the differentiation between libidinal and aggressive impulses fails, resulting in a confusion of objects and impulses, leading to a state of chronic confusion. The psychotic resorts to splitting mechanisms to reduce this sense of confusion, thus reducing the accompanying anxiety. Once this form of splitting is activated, "the confusion and anxiety disappear, but there is clinically a deterioration in the patient's state, since splitting causes the progressive deterioration of the ego" (1950, pp. 134-135).

Rosenfeld illustrates this differing use of splitting for the psychotic and the neurotic in his 1946 paper, "An Investigation into the need of Neurotic and Psychotic patients to act out during Analysis." The psychotic acts out in a manner which creates splits in his environment, forcing objects into persecutory or libidinal roles. In doing so, confusion and psychotic anxiety are lessened, as drive objects are clearly recognizable. For the neurotic, acting out fosters splits

between the patient and his own feelings, particularly those of depression. In the primitive states, splitting serves to remove and project unwanted impulses. In the neurotic and normal states, splitting serves the aim of repression.

Bion's contribution to the concept of splitting begins with the theoretical lines set forth by Klein. The full extent of his contribution can be easily overlooked, as Bion conceptualizes splitting as "attacks on linking" (1959, p. 93). He rarely uses the term splitting to describe what he sees as a cognitive, symbol formation difficulty typical of schizophrenia.

Bion suggests that the schizophrenic attacks anything which is felt to have the function of linking one object to another. The prototype of splitting, following Klein, is the attack on the breast originating in the paranoid-schizoid position, which is dominated by part-object relationships. The term "link" is used to describe a patient's relationship with a function, in this case, a cognitive function, rather than a relationship with an object. Splitting is an attack on the cognitive functions which allow for secondary process thought. Bion explains that "Verbal thought sharpens awareness of psychic reality and therefore of depression which is linked to the destruction and loss of the good object. . . . the patient feels that the association between the depressive position and verbal thought is one of cause and effect" (1953, p. 26). It is in the service of escaping depression that the schizophrenic attacks verbal thought, his own capacity to think and reality itself.

Thoughts are attacked because they link sense-impressions of reality with consciousness but, thanks to the psychotics' over-endowment with destructiveness, the splitting processes are now extended to the links within the thought process itself. As Freud's phrase regarding thought being turned to the relation between object impressions implies, this primitive matrix of ideographics from which thought springs contains within itself links between one ideograph and another. All these are now attacked until finally two objects can not be brought together in a way which leaves each object with its intrinsic qualities intact and yet able; by their conjunction, to produce new mental objects. Consequently, the formation of symbols . . . now becomes difficult. Further, since that-which-links has been not only minutely fragmented but also projected out into objects to join with other bizarre objects, the patient feels surrounded by minute links which, being impregnated now with cruelty, link objects together cruelly. (1957a, p. 50)

In "Notes on the Theory of Schizophrenia" (1953), Bion states that the schizophrenic uses language or verbal thought as a mode of action, a means of communication and as a mode of thought. It is the use of language as a mode of action which Bion sees as underlying the psychotic's use of splitting. By using words as things, that is, confusing the represented with the representation, the schizophrenic engages in a particular form of magical thinking. For example, the schizophrenic may attack the linking of thoughts or objects as an attack against their "linkage" in reality. Bion (1959) and Rosenfeld (1952) both point to attacks on links between the schizophrenic's parental introjects as serving as an attack against parental intercourse.

Beyond this use, Bion cites two further uses of splitting. For Bion, splitting underlies projective identification, in which words as things are "forcefully pushed into the analyst" (1959, p. 25) and as a method of inducing a split in the analyst himself. Regarding the use of

splitting in the service of projective identification, Bion states that the patient strives to rid himself of fears or conflicts which he "feels are too powerful for [him] to personally contain . . . [he] splits off these fears and puts them into me, the idea being if they were allowed to repose there long enough they would undergo modification by my psyche and could be safely reintrojected" (1959, p. 103).

Attempts to induce a split in the analyst is an additional function of splitting. Bion finds that such attempts occur when the analyst becomes identified with internal persecutors. Such a split is accomplished by "schizophrenic language" (1953, p. 24) which conveys a double bind for the analyst; asking him to do something, yet at the same time asking him not to do that very thing. As an example, Bion cites a patient who complained that his therapy sessions were too infrequent and that they interfered with his free time. Bion sees such a statement as an attempt to induce a split in him by the patients making "two opposite interpretations [to me] at once" (1955, p. 25).

While Bion spends the majority of his time writing on the topic of splitting in relation to the psychotic, he does suggest that the splitting phenomenon can be seen in the neurotic and normal individual. In "Notes on the Theory of Schizophrenia" (1953), he hints that the splitting mechanism may be at the root of insomnia in which a split message of "go to sleep" and "do not sleep" are simultaneously being thought. In "Learning from Experience" (1962), Bion states that in addition to the type of splitting based on opposite instinctual qualities, there is a more subtle form of splitting which is reflected

in the difference between the "needed" and "desired" aspects of an object. Owing to the envious hatred felt toward a needed object, arising from the individual's inability to totally possess and control it, one may split off the desired qualities of the needed object, projecting them onto nonhuman objects. While Bion does not suggest this, the development of the transitional object may be seen as following this course in "normal" infant development.

Grotstein, in his major review of current theories of splitting, states that "splitting denotes both a universal phenomenon which occurs throughout our daily lives in multifarious ways and [is] a fundamental defense mechanism. It may be defined as the activity by which the ego discerns differences within the self and its objects, or between itself and objects" (1981, p. 3). In this broad definition, Grotstein suggests that splitting is both a means of defense and a means of making discriminations.

Early in his review, he posits a neurological basis for splitting as it is seen in the infant. He cites recent findings suggesting that the corpus collosum does not fully myelinate until the infant is between 3 and 4 months of age. This would result in impaired or absent interhemispherical communication, leading to the development of "two separate consciousnesses" (1981, p. 7). The implications which can be drawn from this are left unarticulated by Grotstein.

While writing on a more psychological level, Grotstein contends that two major forms of splitting exist, a defensive form and a developmentally appropriate form. In its defensive form, splitting

"involves momentary or permanent countercathexes against unwanted perceptions and feelings" (1981, p. 78). In contrast to Kernberg, Klein and many others, Grotstein holds that defensive splitting is a passive experience, "suggesting the experience of helpless fragmentation beyond one's control" (1981, p. 78).

In its developmental form, splitting is seen as functioning under the "auspices of perceptual and cognitive thinking where discrimination is required" (1981, p. 78). This form of splitting is considered to be an active experience, and by implication, largely volitional.

Grotstein's (1981) view of the organization of split object representations is somewhat more complex than the more common "good/bad" or "pleasure/tension" conceptualizations. He presents a system of four "invariant internal objects"; the "obstructive object," the "defective boundary object," the "mangus object" and the "stimulating object." The "obstructive object" is seen as being responsible for attacks on thinking and linking mechanisms. The "defective boundary object" results from these attacks on thought and the thought process. This object represents porous boundaries in terms of both ego and body boundaries. The "mangus" object is experienced as "oracular, dooming--it is hovering, sinister and threatening" (1981, p. 98). This object is essentially the same as Bion's "bizarre object" which results from projective-introjective processes and the concomitant fragmentation of ego integrity. The reintrojected object comes to have a quality of eerie "otherly-ness." The "stimulating object" is the idealized,

perfected remnant of the original object after it has been split into the three part-objects mentioned above.

The "mangus" object, which Grotstein deals with at some length, is implicated in the dynamics of paranoia, demonical possession, autoscopy and Capgras' Syndrome. In each of these, the split off, disavowed self takes on a retaliatory quality and seeks to "re-enter the disavowing self to torment it and repossess it under its diabolical control" (1981, p. 67). Bradlow (1973) suggests a similar dynamic underlying depersonalization and fantasies of being nonhuman.

Grotstein introduces the novel concept of "primal splitting," which is "the definitive experience of physical birth and the constant repeating--in an effort to undo or deny--psychological birth" (1981, p. 77). The experience of being split in this manner is mitigated by fantasies of "whole-ness or one-ness" with what is referred to as the "Background Object of Primary Identification" (1981, p. 77). This concept is closely related to Winnicott's "environmental mother" (1965) and Sandler's (1960) "background of safety." Grotstein suggests that this form of "being split" is universal and active throughout the range of psychopathology. He summarizes his position on the extent to which splitting is an active mechanism across mankind by stating,

It is a universal experience of man and originates from the experience of existing in separate subelves or separate personalities which have never been totally unified into a single oneness. "At-one-ment" is not only the goal of analysis; it is also the goal of life. Yet it remains only our aim, never our achievement. . . . Normal personalities are split, but the experience of being split is mitigated by repression. (1981, p. 18)

The position held by Masterson and Rinsley on the development and function of splitting is best reflected in their 1975 paper "The Borderline Syndrome: The Role of the Mother in the Genesis and Psychic Structure of the Borderline Personality." In this work, Masterson and Rinsley question the theories of Kernberg and Mahler in regard to the etiology of the borderline personality, stating that both authors base their respective approaches in an assumption of an innate overabundance of aggression which leads to the development of object and ego splitting (1975, p. 165).

Masterson and Rinsely present an experiential model of borderline development, focusing on the mother-infant dyad. They contend that the borderline's development is fixated in the rapprochement subphase due to the mother's withdrawal of her "libidinal availability" (1975, p. 165) as the child begins to individuate from her. The maternal withdrawal is seen as a defensive action on her part against the threat of the loss of the child and her own need to "cling" to the infant. In this model, the child is rewarded by his mother for clinging behavior and is punished through the withdrawal of libidinal supplies when he separates.

These themes of reward and withdrawal become introjected and function as the "leitmotif of his psychic structure and reappear in his pathological split self and object representations" (1975, p. 165). The ability to integrate these split representations would require further individuation; an act which would provoke further withdrawal of maternal availability. In normal development, the infant at this stage depends on the mother for "refueling" as he enlarges his contact with his

surrounding world. This needed emotional fuel is denied the borderline infant.

Out of this situation, two major "object-relational-part-units" are seen as developing. The withdrawing part-unit is characterized by maternal part representations which are attacking, critical and rejecting, part-self representations of being bad, helpless, inadequate, empty and hopeless with linking affects of rage, frustration and depression. The "rewarding" or libidinal part-unit is composed of part-object representations which offer approval, support and love on the condition of the infant's regressive behavior. Part-self representations are of being good, compliant and passive. Associated affects include feeling of goodness, promises of gratification and wishes for reunion.

Masterson and Rinsley take exception with Kernberg's notion of ego-splitting in the borderline in which the ego splits into two parts, one functioning according to the pleasure principle while the other functions according to the reality principle. These authors stress "that in the case of the borderline, the concept of ego splitting implies, not that previously formed structure has undergone regressive splitting, but rather, that a coherently functioning ego, operating in accordance with the reality principle has failed to develop" (1975, p. 169). Rather than having formed a "cohesive" ego which is subsequently split, Masterson and Rinsley suggest that two "part-egos" are developed; the pathological ego, operating in accordance with the pleasure principle and a reality ego operating under the reality

principle. In the case of the borderline's interaction with the mother, it is the pathological ego which attempts to escape the threat of abandonment by denying the reality of its separation from the mother.

A similar concept is advanced by Ross and Dunn in their 1980 article, "Notes on the Genesis of Pathological Splitting." They expand on the position of Masterson and Rinsley by introducing the concept of "reverberating systems" (1980, p. 337), in which not only are the infant's representations split as it strives to individuate, but archaic object relations within the mother are reawakened, producing unbearable ambivalence for her. Thus, the role of maternal pathology beyond her simple neediness is stressed in the pathogenesis of the borderline personality.

Clearly, the concept of splitting can be seen as creating a good deal of confusion. Pruyser (1975), after suggesting that at least four different and distinct definitions of "splitting" can be found in the psychoanalytic literature, suggests that both the term and concept be "banned from the psychological vocabulary" (1975, p. 44). He objects to both the concept and term on the grounds that "splitting" is (1) "a tricky and loaded word," (2) it refers to a concept of space and distance, both of which are not applicable to psychic functioning, (3) it implies both an actor who does the splitting and an object of the splitting, both of which he suggests are unnamed and unclear and finally, (4) that "neither did we find evidence that anything alleged to be split really became split, for all the items mentioned had already been split before" (1975, pp. 43-44). He characterizes the concept as

"some splitter does the splitting and whatever becomes split 'splits'" (1975, p. 44).

Despite Pruyser's colorful objection, the clinician is still faced with patients who describe significant others or who relate to them in a rapidly oscillating manner, either in an idealized or deprecated manner, without apparent recognition of the contradiction evident in these oscillating descriptions. Despite Pruyser's dislike for the term splitting, he offers little in the way of an alternative explanation. Yet, the phenomenon demands some understanding in a broader theoretical framework.

The work of Kernberg in describing and understanding this concept currently enjoys wide acceptance in the psychoanalytic community. Mahler (1971), Lichtenberg and Slapp (1973), Lustman (1979), Chessick (1977), Blanck and Blanck (1979), Volkan (1976), Ross and Dunn (1980) and Grotstein (1981) credit Kernberg with originating the most complete theoretical consideration of the concept of splitting. These authors agree with Kernberg's concept of the development of drive determined constellations consisting of a representation of an object, a memory of the self interacting with the object and an affective coloring; the totality constituting an "object relationship." Owing to their drive determined qualities, two sets of such constellations are formed, the "good" representations corresponding to the libidinal drive derivatives and the "bad" representations corresponding to the aggressive drive derivatives. The inability to integrate and modify these libidinally and aggressively determined representations is seen as the basic cause

of splitting (Volkan, 1976). Kernberg suggests that this inability is due both to "the generation of anxiety in the ego when the 'good' representations, serving as the ego's core, are threatened by 'bad' representations" (1976, p. 35) and "an inability to neutralize aggression" (1976, p. 45). Note the difference in this from Fairbairn's position which suggests that splitting occurs out of the inability to deal with the frustrating aspects of both aggressive (antilibidinal) and libidinal object interactions.

Splitting is defined by Kernberg as "the active process of keeping apart introjections and identifications of opposite (drive-determined) qualities" (1976, p. 29). He describes the clinical manifestations as

the alternate expression of complementary sides of a conflict in certain character disorders, combined with bland denial and a lack of concern over the contradictions in his behavior and internal experience by the patient. Probably the best known manifestation of splitting is the division of external objects into "all good" ones and "all bad" ones, with the concomitant possibility of complete, abrupt shifts of an object from one extreme compartment to the other; that is, sudden and complete reversals of all feelings and conceptualizations about a particular person. Extreme and repetitive oscillation between contradictory self concepts may also be the result of the mechanism of splitting. (1976, p. 29)

This description captures the essence of what the clinician is faced with in his dealings with the schizophrenic, narcissistic and borderline patient. Despite Kernberg's clarity in his description of this phenomenon, several difficulties exist in his theoretical understanding of the process of splitting.

Chief among these difficulties is the question of what is split. Kernberg (1976, 1977) suggests that "bad self-object-affect constellations" are split from "good self-object-affect constellations" which

serve as the ego's core. The developing ego eventually tolerates the anxiety engendered when "bad" representations are included in the individual's self representation (composed originally of all good constellations and amounting to at this point a subsystem of the ego). This ushers in the phase of object integration or "object constancy." The ego now becomes an entity composed of both good and bad constellations and maintains a repressive barrier with which to deal with unacceptable impulses via repression rather than by splitting. As this process of object integration continues and the self becomes differentiated within the ego, Kernberg states that what is split becomes "the self and no longer the ego" (1976, p. 45). Thus, in Kernberg's view, what is split in the process of splitting is firstly nothing; splitting is seen as the natural division of memory constellations along the lines of their drive qualities. With further development and the beginnings of an ego core, the ego itself is split in order to maintain its integrity and avoid the anxiety that bad objects will destroy the "good object based ego core." One can only assume that Kernberg (1976) is referring to ego functions as being split at this point, such as perception and memory, for his scheme provides for an already split ego core composed of all good introjects with all bad introjects being formerly "ejected". Finally, when the self has differentiated itself as a substructure of the ego, it is the self which is split and no longer the ego.

A second area of some confusion is the issue of when the process of splitting can be considered "defensive" as opposed to a developmental

process. Kernberg's treatment of this issue is fairly clear. The early splitting (expulsion of negative introjects) of the infant is regarded as a primary process reaction to divergent drive-determined affective states. The early expulsion of negative "introjects" forms a "purified ego core" with the subsequent splitting being employed in an attempt to protect this core from anxiety in the form of a threat from bad introjects. This would appear to be a defensive measure on the part of the young ego. However, it must be remembered that these good and bad constellations have not been integrated at this point. Therefore, splitting at this stage is nothing more than keeping apart constellations which are already apart. This was Pruyser's point when he commented that "all the items mentioned 'which are allegedly split' have already been split before" (1975, p. 44). Two alternative explanations may account for this discrepancy. Perhaps Kernberg is suggesting that some psychic force at this point is motivating the tendency to include negative introjects in the purified ego. If this is the case, he leaves this force unnamed and the reasons for this tendency toward integration unexplained. The position which Pruyser seems to argue for is that it seems more parsimonious to assume that these two divergent drive-determined constellation sets continue to remain in their original separate state and that the concept of splitting is not necessary at this point to explain this separation.

Kernberg states that object integration begins at about 36 months, leading to the differentiation of the ego and id via the construction of a repressive barrier and ushers in the development of the ego proper.

Following this integration, Kernberg states that splitting can occur, yet what is split is the self and no longer the ego.

Kernberg suggests that the use of splitting gradually diminishes with the differentiation between the ego and the id, eventually to be replaced in normals by the mechanism of repression. Others who essentially agree with Kernberg's position up to this point (Lichtenberg & Slapp, 1973; Ross & Dunn, 1980; Grotstein, 1981) suggest that splitting is not replaced by repression with the establishment of the repressive barrier and can be seen in individuals with both pre-Oedipal and Oedipal pathologies as well as in normals.

Thus, the issues which are in dispute in this conceptualization of the etiology and function of splitting according to Kernberg's theory are: (1) what is split in splitting, (2) is Kernberg's drive-determined theory sufficient to account for the phenomenon, (3) is splitting only a response to aggressive drive-determined derivatives as Kernberg would suggest or does the stimulation of both aggressive and libidinal drives produce splitting, (4) does splitting occur once object integration has occurred and the repressive barrier is erected, and (5) what are the covarying relationships between the various drives, self representations and object representations.

A subtle second theme underlies much of the literature on the etiology of splitting, reflective less of traditional drive theory than the emerging developmental approach to understanding psychopathology. This theme is found in the work of Mahler (1975), Masterson and Rinsley (1975) and Grotstein (1981). The process of splitting reaches its

zenith during the rapprochement crisis (Mahler, 1975), at which time the toddler's separateness from his mother is first realized. Suddenly, the youngster is no longer under the illusion that he is in control of the comings and goings of others. His relationship with his "mother-extension" crumbles. During this period longing for reunion with the symbiotic mother and an associated defensive fear of reengulfment becomes a focal conflict (Mahler, 1975). In a brief note regarding the etiology of splitting, Mahler states, "Another possibility is that the absent mother is felt to be all good, while others become all bad. . . . When the mother returns she disrupts the ideal image, and reunions with her are often painful, since the young ego's synthetic function cannot heal the split" (1975, p. 292). This reunion is not only painful owing to the disruption of the idealized image, but also because of the reactivation of engulfment fears previously discussed. In this, Mahler suggests a substrate of splitting organized around a "wish for symbiosis-fear of symbiosis dimension."

Grotstein (1981) echoes these thoughts in considering "Primary splitting," which is, "the definitive experience of physical birth and constantly repeating, in an effort to undo or deny psychological birth" (1981, p. 77). This experience of psychological birth, that is, of the loss of symbiotic union, is "mitigated by fantasies of wholeness or oneness" with the maternal object (1981, p. 77).

Masterson and Rinsley (1975) point to a similar conflict between the wish for and fear of reunion with the symbiotic mother in their consideration of the maternal response to the infant's increasing

separation, particularly during the rapprochement crisis. They contend that the mother's inability to deal with her own anxiety during the separation-individuation process leads her to reward symbiotic behavior by providing libidinal supplies while withdrawing such supplies when the infant acts in a manner which would be seen as breaking the symbiotic bond. This, they contend, "becomes [the] leitmotif of psychic structure and reappears in his [the infant's] pathological split self and object representations" (1975, p. 165).

As a result of these conditions, object and self representations with linking affects develop in a dual manner. The "withdrawing object relation unit" consists of maternal representations that are attacking, hostile and critical. Self representations are of being inadequate, helpless, empty, bad and guilty. Linking affects are of anger, frustration and depression. The "rewarding object relation unit" consists of objects seen as approving, supportive and loving. The self is seen as being good, passive, compliant and satisfied. Linking affects are of pleasure, promises for or hope of continual feeding and experiences of a gratified wish for reunion.

Each of these authors clearly points to issues organized around symbiotic conflicts in their understanding of the etiology of splitting. Such a conceptualization offers a vastly different understanding than those of the traditional drive theorists. This divergence represents a final area of dispute in the current literature on splitting.

In order to experimentally approach these issues it was necessary to employ a method of stimulating drive-determined derivatives within an

individual. The conscious manipulation of such derivatives, such as the provoking of a subject, has an inherent limitation in that the subject would be likely to fend off such threatening impulses in a characterological manner, generally through more developed defenses than splitting. This leads to the necessity for a method of experimental manipulation which can be carried out in such a way as to stimulate unconscious drive derivatives without the stimuli being allowed conscious recognition. As Silverman pointed out, "According to psychoanalytic theory, the link between psychopathology and the libidinal and aggressive drives depends on the wish remaining unconscious" (1976, p. 624).

Silverman (1964, 1965, 1967, 1971, 1972a, 1972b, 1974, 1976) has reported on an experimental method designed to stimulate drive-derivatives without allowing for conscious recognition of the stimuli. He calls this method the "subliminal psychodynamic activation method." The following section will discuss experimental approaches to the confirmation of psychoanalytic theory in general and the specific design employed by Silverman for investigating the effects of "subliminally activated" drives and drive states.

CHAPTER 2

REVIEW OF EXPERIMENTAL APPROACHES TO THE STUDY OF PSYCHOANALYTIC THEORY

Several authors (Fisher, 1960; Pine, 1964; Reyhner, 1971; Silverman, 1976) have noted the need for experimental approaches to the study of psychodynamic propositions. These authors essentially argue that the bulk of psychodynamic theory has been developed from "naturalistic" observation, that is, from material gathered from clinical interaction, patient's dreams, fantasies and associations. Although the usefulness of such data is not questioned, it is seen as generally deficient in providing "scientific" support for theoretical understandings for four reasons. First, the data base from which the "clinical theory" is derived is largely unreported in a detailed, verbatim fashion. Since clinical material from which theories are developed are largely verbal in nature, this deficiency leaves the data base unavailable to others to examine. Secondly, due to its verbal and idiosyncratic nature, replication is largely impossible. Thirdly, the evaluation of clinically generated material presents insurmountable difficulties in the area of "controls," particularly in the areas of "experimenter bias," demand characteristics and control populations. Finally, although specific findings are posited which relate events in a causal fashion, for example, introjected anger as resulting in depression or incestuous fantasies as leading to the development of

homosexuality, the methods used to generate such data do not lend themselves to causal conclusions. By and large, such reports are correlational at best, and related to this, few such investigations allow for the systematic manipulation of the variables which are being assessed while all other relevant variables are held constant.

The conclusion that clinically generated theory must be supported by research procedures which are capable of employing the systemic manipulations of variables, controls, are replicable and minimize bias easily follows. As Silverman (1976, p. 622) states, "thus, such data [clinically generated] must be supplemented and complemented by data from more formal research procedures that are capable of exercising these controls."

A brief digression is now in order which will provide some limits to the area under consideration. The specific proposition under consideration is the relationship between conflictual drives, drive derivatives and wishes to psychopathology. As Fenichel (1945), Klein (1954), Sarnoff and Corwin (1959) and Silverman (1964, 1965, 1972a, 1972b, 1974, 1976) have independently noted, psychoanalytic theory postulates that psychopathology" emerges as a reaction to the presence of unconscious conflictual libidinal and aggressive drives or wishes" (Silverman, 1976, p. 623). As Fenichel puts it, "Conflict takes place between drives, that is, the id and the ego. . . . the conflict by definition is one between a tendency striving for discharge and another tendency that tries to prevent this discharge. . . . in general, it is permissible to equate the tendency that strives for discharge with

drives [instinctual impulses]" (1945, p. 129). When a wish, drive or striving for discharge threatens the individual with anxiety, guilt, danger, panic, etc., and can not be modulated by otherwise regulating or controlling its expression, "the individual attempts to ward off these wishes by employing various defensive operations" (Silverman, 1976, p. 623). If the defense is unsuccessful, derivatives of the wish, anxiety or complex symptoms result. For a more complete description of this concept, particularly regarding the relationship between drive derivatives and symptom production, see Fenichel (1945, p. 141-192).

Kline (1972) reviewed the literature of experimental approaches to the relationships between wishes and drives and the formation of symptoms and psychopathology. He cites that with "rare exception" (e.g., Sarnoff & Corwin, 1959; Silverman, 1964, 1965, 1971) the research in this area has been limited to correlational studies. In such studies a person with a particular type of pathology is assessed for the degree to which they demonstrate a particular kind of wish, anxiety, defense or dynamic. Numerous examples of such an approach are available in the literature. One example has been a number of studies on homosexuality which seek to compare homosexuals and heterosexuals in regard to the presence of castration anxiety or Oedipal fantasies (see Krawer, 1971, for a review of these studies). By and large, such studies are of limited value in that they address only the issue of the presence or absence of such wishes or drives, while the theory posits their motivational effect, that is, the issue of causality is not addressed. Further, the theory does not suggest that the presence of a particular

drive is unique for a particular diagnostic group. Again, it is the motivational quality that is posited. Thus, even a highly positive correlation between a drive, wish or fantasy and the production of a symptom would not address this question of motivation, an issue approachable only if causality could be assessed.

In order to test for causality, an experimental (rather than naturalistic or correlational) method is needed. Such an approach should allow for the manipulation of operationally defined variables (drives, wishes, etc.) and the assessment of the impact of such manipulation in terms of symptomatology or psychopathology. Silverman (1976) points out that it is important that the manipulation of these variables must not alter their status as drives or wishes, that is, it should not alter its status as unconscious content by introducing stimulation which would render the wish or drive conscious. As Silverman points out, "according to psychoanalytic theory, the link between psychopathology and the libidinal and aggressive drives depends on the wish remaining unconscious" (1976, p. 624). Hence, directly manipulating drives, such as in provoking a subject to anger, would place the drive on the level of a conscious impulse, which according to the theory would "make it highly unlikely that a pathological response would ensue" (Silverman, 1976, p. 624). Pine (1964) argues that if a drive derivative is allowed recognition in consciousness, the subject has the option of acting on it or not, similarly, it may be subjected to defensive operations which would alter or distort the drive quality. An experimental approach which would be appropriate for the study of the

relationships between drives or wishes and psychopathology would have to allow for two tasks: (1) the stimulation of the unconscious drive and (2) not allowing the drive entrance into consciousness.

Silverman (1967) reports on the "subliminal activation method" as just such an experimental approach. He notes that if a stimulus "containing drive related content registers and if a clinically sensitive instrument is used to assess the effect of the registration, drive derivatives seeking discharge, defensive operations in relation to the derivative and the emergence of various kinds of pathological reactions have been noted. All [of these] occur on a small scale, lasting a brief period" (1967, p. 376). The rationale of this approach is as follows: if a drive related stimulus is subliminally perceived by an individual, it is expected that the stimulus will "make contact with derivatives of that drive and related drives in the individual" (Silverman, 1976, p. 625). Pine (1964) suggests that such a stimulus is endowed with "drive cathexis" which serve to mobilize the drive into seeking discharge. Under these conditions, the direct effect of the drive on the assessment measure can be gained.

Several investigators (Fisher & Paul, 1959; Klein & Holt, 1960; Pine, 1960, 1964; Silverman & Luborsky, 1961) have postulated that marginal, rather than direct or focal stimulation, owing to the nature of their registration outside of consciousness, are governed by the laws of primary process (primitive, nonlogical, drive-dominated thinking). Pine concludes that "the effects are suggestive of the processes of condensation, symbolization and perceptual alteration" (1964, p. 208).

Thus, in the "subliminal activation method," both the drive derivative perception takes place outside of consciousness and then, owing to the alterations mentioned above, the drive related character of the stimulus is obscured. This alteration, suggests Pine (1964), allows for the drive to be stimulated without it entering consciousness.

Historically, research in the area of subliminal perception began with the systematic investigations of Poetzl (1917). While these investigations were limited to a basic consideration of the phenomena with particular attention to the length of exposure, intensity of exposure, etc., he laid a groundwork upon which clinical applications of subliminal stimulation were to be later based. Some forty years later, Fisher (1954, 1956, 1959) published a series of articles on the formation of images and dreams in which subliminal stimuli were employed in order to "activate" specific drives, affective states, memories and "day residue-like" material. Of particular interest is a study conducted by Fisher and Paul (1959) in which Rubin double-profile figures, figures which alternate in their figure/ground dominance, were subliminally presented to subjects. The experimental task in this study was for the subject to free associate. Under these conditions, it was found that the number of associations with the quality of "twoness" increased significantly following the subliminal stimulation. (For a full account of earlier studies in the area of subliminal perception see Pine, 1964, or Dixon, 1971).

During the 1960s research in the area of subliminal perception in general came under attack for methodological weaknesses, particularly

based on the suggestion that "partial cues" were available to the subject in such experiments which provides hints as to the content of the subliminal stimulus (Erikson, 1960; Gunthrie & Wiener, 1966). Silverman (1976, p. 624) reports that such objections led investigators to tighten their procedural controls, particularly in the use of control groups, the use of "neutral" stimulus conditions and the implementation of a postexperimental discrimination task in order to determine if the subject under consideration could discriminate between the experimental and neutral stimuli. The effectiveness of these newly instituted controls was investigated by De Martino (1968). Employing every type of detection instrument which would reveal the presence of partial cues and systematically eliminating them, De Martino continued to find experimental effects of subliminal stimulation in various assessment tasks, leading him to conclude that the effects of subliminal stimulation can not be accounted for by the partial cue hypothesis. Dixon, in his 1971 review of the area of subliminal perception and stimulation, Subliminal Perception: The Nature of a Controversy, suggests that based on the literature to date, the notion of subliminal registration as an actual phenomenon has been demonstrated "beyond any reasonable doubt" (1971, p. 217).

The Subliminal Psychodynamic Activation Method

Silverman, in conjunction with many coauthors (1964, 1965, 1967, 1971, 1972a, 1972b, 1974, 1976) has presented over 30 studies exploring psychoanalytic hypotheses, particularly those based on the relationship

between drives, wishes and drive derivatives and the impact these have on the development of specific symptoms, clinical syndromes and general psychopathology. His method of stimulating unconscious drives and wishes without altering their "unconscious status" is called the "subliminal psychodynamic activation method" (Silverman, 1967, p. 391).

The general method which Silverman employs, and which has been adopted by the vast majority of those conducting experimental work in this area, consists of two sessions. The subjects are seen individually for an experimental session on one day and a control session on the other day, with the order counterbalanced. In the first session, the subject is oriented to the experimental procedure, that is, that he will be asked to participate in several tasks and occasionally to look "into the eyepiece of a machine" (a tachistoscope) where he will see some "flickers of light" which he will be asked to describe. The experiment itself generally begins with a baseline assessment of the subject's tendency to employ or demonstrate the specific type of pathology or symptom that is under consideration. The specific assessment is quite variable, ranging from free-association, Rorschach productions, self-rating scales to one's performance in tasks such as dart throwing. Following the assessment of the baseline, the subject is asked to look into the tachistoscope and describe the flickers of light which he sees. This serves as a control of sorts against the stimulus being perceived supraliminally. With a 4 millisecond, 5 foot-lambert exposure, either the experimental or neutral stimulus is presented in four exposures, spaced 15 seconds apart. The specific nature of the stimulus ranges

from pictorial representations of aggressive themes such as a picture of a man with a menacing look holding a knife, a lion charging, two people fighting, etc., to stimuli consisting of printed messages such as "DESTROY MOMMY," "MURDER STABS VICTIM" or "PEOPLE FIGHTING." Following the stimulus exposure, which may be either the experimental or neutral (e.g., "PEOPLE WALKING," or a picture of two people looking at each other), a reassessment of the pathology under consideration is obtained utilizing the same technique as in the baseline assessment. This assessment is designed to measure the impact of the stimulus on the specific pathology being investigated in the study. The procedure for the second session is identical to the one used in the first session with the exception that the stimulus used in the second session is the one omitted in the first. Thus, subjects receiving the experimental stimulus in the first session receive the neutral stimulus during the second session and vice-versa.

In this design measurement of the baseline and the manipulated experimental and control conditions are provided to eliminate any effect based on the influence of the tachistoscope itself. Following the second session, the subject is given a discrimination task in which they are asked to identify the experimental and neutral stimuli. Silverman (1976, p. 624) states that over 90% of his subjects could not distinguish, at a better than chance level, one stimulus from another under the 4 millisecond, 5 foot-lambert conditions. Of the 10% who could, the reasons that they cited for the discrimination were based in differences in the color or intensity of the two flashes, an effect which is

reportedly eliminated "almost totally" if printed stimulus material is used. Further, several authors (Cox, 1974; Lomangino, 1969; Silverman & Goldweber, 1966) have approached the question of whether the subliminal quality of the stimuli is central to the manipulation of drives and wishes. Each approached this issue by presenting subjects with both subliminal and supraliminal exposures of experimental and control stimuli. Findings consistently point to the same conclusion, although the stimulus creates measurable changes in whatever variable is being measured (generally ego pathology) when it is presented subliminally, with a 10 second supraliminal exposure there is no measurable experimental effect. For example, Rutstein and Goldberger (1973) replicated one of Silverman's earlier studies on the effect that aggressive drives had on the thought processes of schizophrenics. Employing the same stimuli, "CANNIBAL EATS PERSON" as the experimental stimulus and "PEOPLE WALKING" as the neutral stimulus, schizophrenic subjects were presented both under subliminal and supraliminal conditions with the effects measured on subsequent Rorschach productions scored for such things as the presence of contaminations, form quality, fusion and deviant verbalizations. The results of this study confirmed those already mentioned. Although the subliminally presented aggressive stimulus increased the subject's ego pathology; under supraliminal conditions, no effect was found. Such findings led the authors to conclude that the subliminal nature of the stimulus was indeed central in producing the pathology under investigation, relating to its ability to bypass conscious recognition.

The types of experimental manipulations utilizing this method can be roughly grouped into two classes; those designed to increase the type of pathology under consideration through the stimulation of drive derivatives and those designed to decrease pathology. The literature is largely composed of the former. In these attempts, numbering well over 30, four types of psychopathology were investigated, "primary-process ego pathology" (Lomangio, 1969; Silverman, 1971), depression, homosexuality and stuttering.

In all, 16 published accounts of investigations into the relationship between ego pathology and aggressive drives have been reported. Each was designed to test the hypothesis that "primary-process ego pathology" (primitive thinking, contaminations, fusions, loss of reality testing, etc.) in schizophrenia is "immediately a response to a struggle over conflictual aggressive drives" (Silverman, 1976, p. 625). In each, an aggressive subliminal stimulus was presented to the subject during the subliminal stimulation phase of the experiment, stimuli such as a picture of a charging lion, the printed messages "MURDERER STABS VICTIM," "CANNIBAL EATS PERSON" or simply the word "KILL." The measure of ego pathology used in these studies were Rorschach and Rorschach-like tasks which were rated for the presence of the indices referred to above. Employing the experimental procedure outline previously, each investigation led to the consistent finding that such pathology increases under "aggressive" stimulation from the baseline measure while the neutral condition showed no deviation from the baseline. Lomangio (1969) extended this line of investigation into

the effect of drives on the thought processes of schizophrenics by comparing the effect of "orally-aggressive content" and "nonorally aggressive content" on the ego functioning of schizophrenics. The rationale for this study was based on clinically generated reports that oral-aggressive wishes constituted a fundamental conflict for the schizophrenic (see Searles, 1965). Utilizing experimental stimuli of "CANNIBAL EATS PERSON" (oral), "MURDERER STABS VICTIM" (nonoral) and a control stimulus of "PEOPLE WALKING," Lomangio compared the quality and quantity of ego pathology as reflected on Rorschach productions. His findings supported the notion of the centrality of oral-aggressive wishes in increasing ego pathology while nonoral aggressive stimulation did not significantly increase the pathology measure as compared to the baseline.

In a series of investigations, Silverman, Kwawer, Wolitzky and Coron (1973) attempted to test the hypothesis that conflicts over Oedipal and particularly incestuous wishes were causally related to the development of homosexuality (as a flight from incest). Utilizing a self-rating scale to assess homosexual and heterosexual feelings, the authors presented homosexual subjects with a subliminal stimulus consisting of "a scene of an older woman holding a younger man with an embarrassed expression on his face" (Silverman et al., 1973, p. 204). Following this, the subject was asked to rate his feelings on the self-rating scale. The same procedure was used in the control session except the stimulus consisted of a picture of two people looking at each other. Under the experimental condition, the subject's heterosexual

feeling significantly decreased as compared to the baseline measure with a concomitant increase in their homosexual feelings. The subliminal stimulation with the neutral stimulus did not produce any alteration in the self-rating scale as it compared to the baseline. Thus the authors conclude that "these data were viewed as offering support for a crucial aspect of the psychoanalytic theory of male homosexuality: that this kind of sexual orientation involves (in part) a flight from incest" (Silverman, 1976, p. 627).

Three independent studies of the relationship between depressive feelings and aggressive wishes have been reported. In these the interest was in testing the hypothesis that a cardinal aspect of depression was the turning of unconscious aggressive impulses against the self. Each study measured the quality and quantity of their respective subjects' depressive feelings on self-rated affect scales. Three groups of subjects were employed in these studies, a group of hospitalized depressed women (Rutstein & Goldberger, 1973), a group of "normals" judged to be "prone toward depression" due to parental loss in their childhoods (Miller, 1973) and a group of nonpatient college students who "manifested depressive trends" on objective rating scales (MMPI) (Varga, 1973). Although the specific aggressive and neutral stimuli employed differed from study to study, the results were consistent with the hypothesis, that is, the subjects' depressive feelings increased significantly under the aggressive stimulation condition as compared to the baseline while no change was found in comparing the neutral stimulation condition to the baseline measure.

In a group of studies published by Silverman, Klinger, Lustbader, Farrell and Martin (1972) the hypothesis that stuttering was related to conflicts over anal wishes was considered. Utilizing a subliminal stimulus of a picture of a person sitting on a toilet as the "anal" condition and a picture of a person standing as the neutral condition, the subjects, all stutterers to begin with, were tape recorded, first under no conditions (baseline) then under the "anal" and neutral conditions with the order counterbalanced. "Blind" judges rated the degree of stuttering present on the tapes. The results consistently pointed to an increase in stuttering under the anal conditions, while no changes were found in comparing the neutral and baseline measures.

Although the studies mentioned thus far are consistent with the psychoanalytic propositions which were being considered, the proposition that a specific drive or wish produces, or is central in the development of a specific type of pathology had been neglected. To investigate this Silverman, Bronstein and Mendlesohn (1976) exposed a group of schizophrenics, depressives, homosexuals and stutterers to the following: (1) a stimulus "relevant" to the specific type of pathology under consideration (aggression for the schizophrenics and depressives, incest for the homosexuals and anal for the stutterers), and (2) an "irrelevant" stimulus, one which would not be predicted to increase the specific pathology of the subject under consideration but would be expected to increase the pathology of a different type of subject. Thus, in this phase, schizophrenics and depressives were given the "anal" stimulus, the homosexuals were given the aggressive stimulus and the stutterers

were given the "incest" stimulus. Each group also received a neutral stimulus. All of the stimuli were presented subliminally in accordance to the method described earlier. The various pathology measurements were "primary process ego pathology" (as reflected on the Rorschach) for the schizophrenic group, self-rating affect scales for the depressed group, tape recordings of the stuttering group and self-rated measures of sexual preference for the homosexual group. As the theory predicted, the "relevant" stimulus produced increases in the specific type of pathology as compared to the baseline for all groups, while the "irrelevant" stimulation and neutral condition produced no such increase compared to baseline.

In considering this whole series of studies, Silverman concludes that, "The stimulation of libidinal and aggressive mental content can intensify various kinds of pathological behavior; specific relationships are demonstrable between particular libidinal and aggressive content and particular forms of psychopathology and these relationships coincide with clinical reports in the psychoanalytic literature in which particular unconscious conflicts are described as critical for [the development of] particular forms of psychopathology" (1976, p. 627).

As was mentioned earlier, a series of 10 studies (Silverman & Candell, 1970; Silverman, Candell, & Pettit, 1971; Silverman, Spiro, Weissberg, & Candell, 1969; Kaye, 1975; Letter, 1973; Spiro, 1975) have been reported in which the primary interest was the reduction of pathological ego functions in schizophrenic subjects. Each of these studies attempted to stimulate symbiotic fantasies through the

subliminal presentation of the printed message "MOMMY AND I ARE ONE." Combined, these studies included over 200 schizophrenic subjects. Each was conducted in the manner earlier described with an assessment of baseline ego pathology as reflected on Rorschach and Rorschach-like devices which were scored for the presence of contamination, deviant verbalizations, fusions, form quality, etc. In each study, a decrease in such pathology was found following the "sympiotic stimulation" as compared to the baseline while no such effect was found with neutral stimulation. Silverman (1976) summarizes these findings and concludes that they offer support for the concept that if conflicts can be diminished, psychopathology which is generated by these conflicts will also diminish. He suggests three reasons for such findings in the "sympiotic stimulation" studies: (1) it allows for the disavowal of aggression, (2) it promises the presence of oral supplies, and (3) it provides the fantasy of the presence of the sympiotic object.

Two clinical applications of the "activation method" in treatment settings have been reported in the literature. Silverman (1978) reports on an ongoing treatment program in which schizophrenic patients, in addition to chemotherapy and psychotherapy, were given subliminal sympiotic messages at the end of each therapy session. Utilizing ward behavior and subjective reports concerning the nature and frequency of hallucinatory experiences, and the patient's affective state as dependent variables, Silverman reports a more rapid rate of improvement in those subjects receiving subliminal stimulation as compared to a control group who also received chemotherapy and traditional

psychotherapy but did not receive the symbiotic subliminal stimulation. Unfortunately, the design of this study appears flawed on several accounts. First, the patient assignment to the experimental and control groups was not conducted in a random manner. Those individuals who rated the patients' ward behavior as well as the patient's psychotherapist and physician were aware of the particular assignment of any given patient to either the experimental or control group. The rationale of applying such a procedure can easily be questioned in terms of the therapeutic goals involved (gratification of symbiotic wishes vs. interpretation). Silverman (1979) recently reported that further investigations into this application are currently underway employing more stringent controls and a "double-blind" design.

A second series of applied studies were reported by Silverman, Frank, and Dachinger (1975, p. 297) in which subliminal stimulation was included in the treatment of a group of insect phobic women. In this study 20 subjects were randomly assigned to two groups, the experimental group which received the subliminal message "MOMMY AND I ARE ONE" and a control group which received a neutral message of "PEOPLE WALKING." All of these subjects were given a variant of a systematic desensitization procedure, complete with the establishment of hierarchies, visualizations, etc., except when anxiety was reported by the patient, rather than instructing the patient to utilize deep muscle relaxation, the patient was given subliminal stimulation. Each subject was evaluated both before and after each session for the presence of phobic behavior and anxiety. The results of the study suggested that the subjects

receiving subliminal symbiotic stimulation demonstrated an "improvement not manifested by the control group" (Silverman et al., 1975, p. 297). Although these results confirm the contention that this subliminal approach can be used as an adjunct to psychotherapy in certain cases, Silverman extends these findings as offering support for his contention that the process of systematic desensitization by and large provides a "transference cure" through the activation of fantasies of symbiotic union with the therapist "who is unconsciously perceived as the 'healing mother'" (1975, p. 297).

The subliminal activation method has been applied to nonpatient populations in a variety of ways. Silverman (1964) wondered if the same stimulation which produced "primary process ego pathology" in schizophrenic patients, that is, the activation of aggressive drives, would have the same effect on nonschizophrenics. He presented the subliminal message "DESTROY MOTHER" to a group of 77 psychiatric technicians and assessed the degree of the subject's ego pathology with a Rorschach scored for the presence of contaminations, fusions, deviant verbalizations, irrelevant comments and form quality (scored in the same manner as was done with the schizophrenic patients). Both pre- and poststimulation measures were taken in order to establish a "deviation from baseline score." Reasoning that the subliminal registration of the stimulus had to "link-up" with active drive derivatives, derivatives which were active in the schizophrenic population but which might not be active in a "normal" population, Silverman divided his subjects into two groups, "primed" and "unprimed." The 'primed" condition consisted of a

sham recall task at the beginning of the experiment in which the experimenter read a newspaper story of a murder to the subject who was asked to recount it. It was reasoned that in recalling the story, derivatives of the subject's own destructive impulses would be "stirred-up." The unprimed group did not recall a story about a murder but rather, a bland account of a human-interest type story. The experiment itself followed the same procedures as outlined previously.

The obtained results supported Silverman's reasoning that "priming" was needed in order to allow for conditions under which the normal subjects demonstrated ego pathology. Interestingly, these subjects responded in one of two ways, either with an increase in "regressive thinking" (i.e., contaminations, lower form quality, increased personalization of responses and increased strained logic) or with an increase in the quantity of libidinal content on the poststimulation Rorschach. This second effect was interpreted as a defensive effort to combat threatening aggressive drive derivatives. No such changes were found in the unprimed group.

Unfortunately, the need for priming normal subjects in order to obtain an experimental effect is an unsettled issue. Two studies are reported in the literature which involve "normal" who did not receive priming but nonetheless demonstrated experimental effects following subliminal stimulation. Smith, Spence, and Klein (1959) report presenting college students with the subliminal printed messages of either "happy" or "angry" and then asked them to describe a photograph of a face judged to be "affectively neutral." Although this experiment

contained poor controls (i.e., no neutral stimulus, no pretesting to establish a baseline) the results indicated that the subject's description of the face was invariably consistent with the subliminal stimulus which was presented. Thus, under the "happy" condition, the face was described as being relaxed, cheerful, smiling, etc. Ross (reported by Silverman, 1976) presented symbiotic subliminal stimulation ("MOMMY AND I ARE ONE") to a group of normal males with the experimental task being a "dart throwing contest." In this study, his population was totally unprimed, yet the dart throwing performance was significantly increased following the subliminally presented "conflict-alleviating" stimulus.

Clearly, the quality of the desired experimental effects in these three experiments is quite different. Silverman was attempting to induce the equivalent of a thought disorder in his subjects, a threatening effect by any measure. The description of a picture of a face or the throwing of darts are both less intense activities and involve less threat to the subjects. Following this line of reasoning, in attempting to stimulate splitting, again a potentially threatening event owing to its primitive quality, some form of priming was necessary.

CHAPTER 3

HYPOTHESES

Using the popular theoretical understanding of splitting advanced by Kernberg (1976), Mahler (1971), Lustman (1979), and Volkan (1967) as a base, this study was designed to investigate the following issues:

1. Contradictions exist in the literature as to whether splitting is confined to young children and individuals with primitive psychopathology or if it is also found in neurotic and normal individuals as well. Following Kernberg's concepts, splitting ceases with the establishment of the repressive barrier. His theory suggests that splitting would not be found in normal populations. This study attempted to provide empirical evidence that splitting can not be induced in normals.

2. Kernberg (1976, 1977) suggests that splitting is "replaced" by repression in the normal individual and is not seen once object integration has occurred. Others (Lichtenberg & Slapp, 1973; Ross & Dunn, 1980; Grotstein, 1981) state that splitting can occur following the attainment of object integration and that the use of splitting is not replaced by the mechanism of repression. Following Kernberg's theory, this study attempted to provide evidence that splitting does not occur in individuals who have attained object integration and the ability to employ repression.

3. Kernberg links the act of splitting to the activation of aggressive drive derivatives which threaten the ego core. This study attempted to provide evidence that the activation of aggressive drives constitute the necessary and sufficient conditions for the subsequent act of splitting. The review of the literature presented two other theories regarding what "causes" splitting. The first, offered by Fairbairn, suggests that both aggressive and libidinal "drives" produce splitting. The second, offered by Masterson and others, suggests that splitting is a response to maternal actions which encourage symbiotic behavior and threaten the withdrawal of libidinal supplies for acts of individuation. Put in other terms, this approach suggests that the wish for and fear of symbiosis rest at the bottom of splitting. Following Kernberg, neither libidinal drive activation nor symbiotic drive activation or reduction should have an effect on splitting.

4. Kernberg suggests that splitting takes place in a set of representations, including the object representation, the self representation and a linking affect. The present study was designed to empirically consider this assumption. Splitting, if found, should appear in both self and maternal representations. Further, some alteration in the subject's pattern of identification with his maternal representation should be evident. This study was designed to allow for the systematic study of the manner in which the maternal and self descriptions changed following drive activation, both in relation to the drive derivatives themselves and in relation to the covarying attributes of the maternal and self descriptions.

In order to investigate these issues, the following operational definitions were designed to remain as close to both the clinical and theoretical data concerning the nature of object and self representations and the concept of splitting as possible.

The terms object-representation and self-representation have been defined by Kernberg (1976, pp. 29-31), Volkan (1976, pp. 36, 62) and Moore and Fine (1968) as "enduring schemata constructed from a multitude of impressions, realistic and distorted images of the self and the object" (Volkan, 1976, pp. 35-36). They are essentially seen as "a cluster of memory traces" of "the image of an object adopting a role of interaction with the self" (Kernberg, 1976, p. 31). Internalized object relations are said to be "organized into persistent object-images, which come to represent internally the external world as experienced by the ego" (Kernberg, 1976, p. 33). The topographical location of this representational world is reported by Kernberg as spanning the conscious, preconscious, and unconscious realms (1976, p. 34).

Kernberg (1976, 1977) suggests that such representations are reflected in what the patient says about himself and others, in their transference reactions, in dreams and in their fantasy lives. In this, he suggests several different levels of observation in which splitting can be seen, some at a latent level, others on a behavioral level. Lerner and Lerner (1980) discuss various indices of primitive defenses and disturbances in object relationships. In considering indices of splitting, they state:

Splitting is manifest in a tendency to perceive and describe others in terms of overruling polarities. While these polarities convey the division of good versus bad, they may take several forms, including frustrating versus satisfying, dangerous versus benign and friendly versus hostile. The tendency to polarize affective descriptions of objects underlies all the indices we consider indices of splitting. (1980, p. 260)

In order to remain close to both the theoretical notion of representations as "memory traces," which represent the external world internally as well as the clinical data which suggest that such representational functioning can be found in the patient's verbal description of himself and of others, it was necessary to employ object and self-representations which are already active and present in the subject. This was approached on the basis of the subject's "conscious" description of both himself and his description of a significant other, namely his mother. The term "conscious" description should be understood as a description which is provided on a manifest rather than on a latent level. This was designed to tap into the process which the clinician sees when the patient describes himself or an "other" in the oscillating manner which we recognize as splitting.

Splitting, following Lerner and Lerner's formulation, will be defined as a significant difference in the self and/or object descriptions following the subliminally induced drive stimulation as it is compared to the prestimulation description of the self and the object. This operational definition of splitting is felt to reflect accurately the clinical appearance of splitting in which the descriptions of the self and/or object oscillates. There is one notable difference between

this operational definition and the clinical definition of splitting. Where the clinical definition generally involves the oscillation between "good" and "bad" object and self representations without the necessity of first hearing about a "whole object" (in essence we call the oscillation which results from splitting "splitting"), in this operational definition, we will first see a "whole object" and "whole self" representation which will be subsequently altered (split) if an experimental effect is found. Thus, it was felt that this approach reflects more directly the "process of splitting" rather than the "outcome of splitting," which we frequently use as clinical evidence for the existence of this phenomenon.

CHAPTER 4

METHOD

Subjects

Forty-eight undergraduate students in an introductory psychology course were utilized as subjects. Each subject voluntarily participated, receiving extra credit for their participation. Twenty-nine of the subjects were women and 19 were male. The subjects' ages ranged from 18 to 32, with a mean age of 19.6. Eighteen percent were black and 82% were white. An additional 14 subjects failed to complete the experiment and were excluded from the subject pool. In each case, the reason for the failure was nonattendance in the second experimental session.

Subjects were screened prior to their participation with a standard mental status examination and brief psychiatric history in order to exclude individuals with borderline, psychotic or severe neurotic psychopathology. Individuals who indicated either a history of, or the experience of current difficulties in the areas of maintaining stable object relationships, stable mood states, reality testing, difficulties in modulating affective expressions as well as disturbances in thought processes, memory functions and orientation were excluded. One subject was excluded on the basis of this examination.

Subjects were assigned randomly to one of three groups of equal size ($n = 16$). Each group was further divided into two subgroups of

equal size, providing a total of six subgroups. The assignment of subjects was as follows:

Group 1--Libidinal Condition. Sixteen subjects who received Libidinal Tachistoscopic stimulation. Eight subjects received "object-directed" stimulation (condition L0) while eight subjects received "nonobject-directed" stimulation (condition LG).

Group 2--Aggressive Condition. Sixteen subjects who received Aggressive Tachistoscopic stimulation. Eight subjects received "object-directed" stimulation (condition A0) while eight subjects received "nonobject-directed" stimulation (condition AG).

Group 3--Symbiotic Condition. Sixteen subjects who received Symbiotic related Tachistoscopic stimulation. Eight subjects received a stimulus designed to foster symbiotic fantasies (condition Sym) while eight subjects received a stimulus designed to foster fantasies related to the loss of symbiosis (condition LOS).

Apparatus

A Scientific Prototype 800F, two-field mirror tachistoscope was used to present all stimuli. The subject looked through the eyepiece at a blank field and the stimulus was exposed from the other field. The viewing distance in the stimulus field was 33 inches (83.8 cm). Each stimulus slide was exposed for 4 milliseconds, at a 5 foot-lamberts (17.1 cd/m^2) field intensity. The lighting in the blank field and experimental room were maintained at 15 foot-lamberts (51.5 cd/m^2). Each subject received four stimulus exposures, spaced 15 seconds apart.

Each of these factors was thoroughly reviewed both in the literature and in discussions with Silverman and are reported by him (1982, personal communication) as providing consistent stimulation on a subliminal level. In addition, much of the same experimental setup has been employed by Silverman in his series of some 30 studies.

Priming Intervention Stimuli

This intervention was designed to produce a "mind set" in which subjects would focus on, recall or fantasize about themes similar to those contained in the subliminal stimuli. Just prior to the subliminal stimulation in the first experimental session, the experimenter told each subject that he would read a story to the subject which he/she would be asked to recall later in order to "test" the subject's memory. Prior to the second experimental session, one week following the first, the subject was asked to recall everything he could about the story which was read to him. This recall was augmented, if necessary, by the experimenter with additional details from the story to assure that the desired theme was "active" in the subject's mind. The exact text of the instructions to the subject are included in the Procedure section.

The priming procedure administered to subjects was listening to and attempting to recall the following: for the Aggressive conditions, a sham recall task consisting of a newspaper story of a violent crime, in this case a story of a young woman who was pushed from a subway platform in the path of an oncoming train which resulted in severe injuries (for exact copy, see Appendix A); for the Libidinal conditions, a sham recall

task consisting of a story about a mother giraffe taking care of her newborn baby (see Appendix A); for the Symbiotic condition, a sham recall task consisting of a story about a pair of Siamese twins (see Appendix A); for the Loss of Symbiosis condition, a sham recall task involving a story about a birth by cesarean section (see Appendix A).

Stimuli

Six critical (i.e., experimental) and two control stimuli were employed in the various sessions. Each critical stimulus has been previously employed in "Subliminal Psychodynamic Activation Method" studies, each having been reported by Silverman (1982) to successfully "stir" drive related fantasies. Each stimulus consisted of the visual presentation of a printed phrase shown tachistoscopically. These stimulus slides were printed on plain white cardboard in 6.35 mm Berol RapiDesign Vertical Lettering. The various phrases were placed on the slide so they appeared in the center of the subject's visual field. Spacing between letters was adjusted so that each phrase occupied two printed lines of approximately equal length. Light reflectivity was measured using each card with each falling within ± 0.03 foot-lamberts, well below a just noticeable difference.

The stimulus phrases used were as follows: "DESTROY MOMMY" for the "Aggressive Object-Directed" (AO) condition; "DESTROY PEOPLE" for the "Aggressive Nonobject-Directed" (AG) condition; "MOMMY FEEDS ME WELL" for the "Libidinal Object-Directed" (LO) condition; "PEOPLE FEED ME WELL" for the "Libidinal Nonobject-Directed" (LG) condition; "MOMMY AND

I ARE ONE" for the "Symbiotic" (Sym) condition and "I AM LOSING MOMMY" for the "Loss of Symbiosis" (LOS) condition. The two control messages were "MOMMY IS THINKING" for all "Object-Directed" conditions and "PEOPLE ARE THINKING" for all "Nonobject-Directed" conditions.

Data Collection

In this section a brief review of the theory, construction and scoring of the ICL will be presented. The Interpersonal Checklist was designed by Leary and his research group (1957) to reflect the patient's subjective, verbal description of himself or of others, what Leary calls "level II" behavior. This measurement, as all of Leary's Interpersonal Diagnosis devices, is based on an empirically derived classification system composed of 16 interpersonal variables arranged along a continuum in "such a way that fixed relationships between the elements exist" (Leary, 1957, p. 64). The specific arrangement consists of a circular continuum arranged along two major axes, the vertical "dominance-submission" axis and the horizontal "hostility-affection" axis. In this arrangement, two variables are collapsed together to form eight diagnostic octants, each containing both normal and extreme forms of the particular behavior or attribute in question. The relationship between octants is as follows: octants which occur closer to each other are seen as representing more similar attributes as compared with octants which are further away from each other. Thus, octant 4, "paranoid attributes," is seen as closer to octant 3, "aggressive attributes,"

than it is to octant 1, "managerial attributes." The validity of this arrangement has been investigated by La Forge and Suczek (1955).

The ICL is scored for the presence of these 16 variables. In its current use, it is designed to measure the subject's phenomenological field. The present form is comprised of 128 items, 8 of which are descriptive of each of the 16 personality variables included in the checklist. An intensity variable has been built into the ICL such that each of the 16 variables is represented along a 4 point intensity scale. For each variable there is one intensity 1 item which reflects a "mild or necessary amount of the trait." Three items reflect intensity 2, referring to "a moderate or appropriate amount of the trait. Three items reflect intensity 3, a "marked or inappropriate amount of the trait. An item of the eight items which compose the description of one of the 16 personality traits is of intensity 4, referring to an extreme amount of the trait" (Leary, 1957, p. 455). The arrangement of the ICL items in respect to their octant and intensity is presented by Leary (1957, pp. 456-457).

Once DOM and LOV scores are obtained, standard score conversions can be obtained by use of a table provided by Leary (1957, p. 495). These DOM and LOV standard scores are plotted along their respective axes on a "diagnostic grid" (Leary, 1957, p. 141) to determine octant location and intensity.

Obtained diagnostic codes can be compared to assess the presence of significant discrepancies between two codes. For example, ratings obtained following subliminal stimulation with a critical message can be

compared to those obtained following stimulation with a control stimulus. Leary provides a table for comparing two diagnostic codes (1957, pp. 498-499). To read this table one enters it with the two diagnostic codes in question. The left-most table compares codes of extreme form (outside the inner circle on the diagnostic grid), the next column compares codes of moderate intensity (both diagnostic codes fall within the inner circle of the diagnostic grid), the third column compares one code of extreme intensity and one code of moderate intensity (one code outside the inner circle and one code within the inner circle) and the forth column compares codes in which one is of moderate intensity and the other of which is of extreme intensity (one falls within the inner circle and the other falls outside of the inner circle on the diagnostic grid). The pairs of numbers within the table refer to the diagnostic codes, with the extreme codes being represented in Roman style print and the moderate codes being represented in *Italic style print*. The column with the notation "d" refers to the degree of difference between the two codes. Within this system, a "d" score of 44 or more is considered to constitute a significant difference (Leary, 1957).

The subjects in this study were asked to describe both themselves and their mothers on parallel forms of Leary's ICL. The two forms are included in Appendix B. In a pilot study, 15 subjects were provided with these two forms and asked to describe both themselves and their mothers on each of the two forms. During the first of two sessions, the subjects were asked to describe themselves on form A and their mothers

on form B. During the second session, subjects were asked to describe themselves on form B and their mothers on form A. These subjects consisted of eight females and seven males with an age range of 19-27. Following standard score conversion, correlations were computed between the self ratings and the maternal rating using the two forms of the ICL. A correlation of .97 was obtained for DOM standard scores and .96 for the LOV standard scores.

The ICL was employed in this study because it allows for the description of the same type of behavior in both its "normal" and "extreme" (pathological) forms. Secondly, owing to its use of phrases which the subject endorses as descriptive of the individual in question, the obtained description is on the level of conscious report. Thirdly, owing to the level of description obtained from an ICL, a difference in the prestimulation and poststimulation descriptions would closely parallel the clinical manifestation of splitting, namely the oscillation in describing and reacting to an object. Fourth, the ICL is organized along two major axes; LOV, organized along a continuum ranging from love to aggression and DOM, organized along a continuum ranging from action to inaction. The LOV axis corresponds directly to the aggressive and libidinal conditions employed in this study. Finally, the ICL, through various combinations of the LOV and DOM scores, allows for the examination of the effects of the experimental drive stimulation on a large variety of descriptive classes, attributes, and traits.

Procedure

The 48 subjects were randomly assigned to one of six groups through the use of a random numbers table. Each group consisted of 8 subjects. The assignment of subjects to stimulus conditions is graphically represented in Table 1. Following the assignment to a group, each subject was assigned a code number which specified the stimulus conditions and order of presentation. Each stimulus slide was likewise assigned a code number. These assignments were done by an individual who was naive as to the purpose of the experiment. The stimulus slides were inserted into the tachistoscope covered with a sheet of plain cardboard which was withdrawn once the slide was in place. In this manner, neither the subject nor the experimenter knew the condition assignment throughout the stimulation phase of the experiment.

The identical procedure was employed for all subjects. Each subject was seen for two experimental sessions, one critical session and one control session, with the order counterbalanced. The subject, upon entering the experimental room on the first session, was seated in front of a table. The subject was asked to read and sign an informed consent form, a copy of which is included in Appendix C. Following this, the subject was engaged in an unstructured interview during which questions were asked regarding the subject's mental status and psychiatric history. A summary of the areas investigated in this interview is included in Appendix D. In the course of this interview, the subject was asked, "I would like to get to know a little more about you and your

Table 1
Condition Assignments for the Groups

Group name	Priming stimulus	Critical stimulus	Control stimulus	<u>n</u>
1. Libidinal				16
A. Object-directed (LO)	Giraffe story	"MOMMY FEEDS ME WELL"	"MOMMY IS THINKING"	
B. General (LG)	Giraffe story	"PEOPLE FEED ME WELL"	"PEOPLE ARE THINKING"	
2. Aggressive				16
A. Object-directed (AO)	Subway story	"DESTROY MOMMY"	"MOMMY IS THINKING"	
B. General (AG)	Subway story	"DESTROY MOMMY"	"PEOPLE ARE THINKING"	
3. Symbiotic related				16
A. Symbiotic (Sym)	Siamese twins story	"MOMMY AND I ARE ONE"	"MOMMY IS THINKING"	
B. Loss of symbiosis (LOS)	Cesarean section story	"I AM LOSING MOMMY"		

likes and dislikes. Would you tell me what books and magazines you have read in the past month?" This was included in the unstructured interview since an article by Silverman had appeared in a popular Psychology magazine (Psychology Today) shortly after the experiment began. The reading of this article was believed to represent a possible compromise to the integrity of the current experiment and subjects exposed to it were to be excluded. No subjects had to be excluded on this basis.

Following this, the experimenter said:

"Before we begin the experiment, I would like to get an idea of how well your memory is functioning. I will read a story to you now and will be asking about it later."

The appropriate priming stimulus was then read to each subject (see Table 1). After the reading, the subject was told:

"Good, now I'd like you to sit in this chair (placed in front of the eyepiece of the tachistoscope). This machine is called a tachistoscope. It allows me to present a stimulus at very fast speeds. In this case, the speed will be so fast that you will probably only see a flicker of light. If you see anything other than a flicker or flash, I'd like you to tell me and describe what you saw. In a moment I will ask you to look into this eyepiece. Try to keep your eyes open. I will count three, two, one and then you will see the flash. Now look into the eyepiece and try to keep your eyes open and your face as tight against the eyepiece as possible. Ready? Three, two, one . . ."

The subject was asked to move from the writing table to the tachistoscope because differing lighting conditions were necessary for reading forms and for viewing the stimulus slides. The time spent giving the subject instructions allowed the subject's eyes to accommodate to the lowered lighting conditions for the tachistoscope viewing. This

prevented visual "washout." "Washout" is condition in which the stimulus fails to register visually because either the fovea has been stimulated by ambient lighting prior to receiving the tachistoscopic stimulation and has not had time to accommodate to less intense lighting conditions or to the presence of strong ambient lighting which "leaks" into the subject's visual field during the tachistoscopic viewing, in essence masking the visual stimulus being presented.

The subject received four stimulus exposures, spaced 15 seconds apart. After each exposure, the subject was asked what he had seen. These procedures have been recommended by Silverman (1982, personal communication) and have been employed in over 50 previous studies.

Following the tachistoscopic stimulation, the subject was asked to return to the chair in front of the table. The experimenter then said:

"Now I'd like you to go through this checklist and check any of the phrases which you feel describe your mother."

The subject was given an ICL form and a pencil. When the ICL was completed, the experimenter said:

"Now, let's go back to the tachistoscope for four more flashes."

The subject was presented four more exposures of the same stimulus message under the same lighting and timing conditions. Following this, the subject returned to the table and was given another ICL form. The experimenter said:

"Good, now I'd like you to go through this checklist and check any phrases which you feel describe you."

The form of ICL used was predetermined so that half of each group received form A for the description of their mothers and form B for the description of themselves, while the other half received form B for their mothers and form A for themselves. Subjects receiving the A-B forms during the first session received the B-A forms during the second session.

Once the subject finished describing himself, the experimenter said:

"Good. That's all for today. You have an appointment to return here in one week at the same time. See you then."

Upon the subject's return for the second session, he was seated in front of the writing table and was asked to recall as much about the "memory test" story as possible. Additional details were offered by the experimenter, if needed, until it was clear that the desired theme had been discussed. The experimenter asked the subject to return to the tachistoscope. The identical instructions were read to the subject as were read in the first session. The subject was presented with four exposures in an identical manner to that of the first session. The stimulus message exposed in this session consisted of the appropriate message for the subject's group assignment which was not exposed in the first session. For example, if the subject belonged to the "Libidinal Object-directed" group, he would receive either the critical message "MOMMY FEEDS ME WELL" during the first session and the control message "MOMMY IS THINKING" during the second session or the control message during the first session and the critical message during the second

session (see Table 1). Subjects were preassigned to the various conditions and order of presentation by an individual who had no knowledge of the experiment.

Following the four exposures, the subject was asked to return to the writing table and the experimenter said:

"Good. Now I would like you to fill out this checklist. It may be similar to those of last week. I am interested in how you are feeling right now. This is not a test of memory. Check the phrases which describe your mother as you feel about her now."

Following the subject's rating of his mother, he was asked to return to the tachistoscope. Four more stimulus exposures were presented after which the subject was asked to rate himself on an ICL form. After giving the subject the appropriate form, the experimenter said:

"Now I'd like you to fill out this checklist by checking any of the phrases which describe you. Again, this is not a test of your memory. Just check the phrases which describe you now."

With the completion of this fourth rating, control and critical ICL ratings for the subject's mother and self had been collected.

The subject next participated in several discrimination tasks. In the first task, the subject was told to look into the eyepiece of the tachistoscope where he would see a stimulus slide presented at increasingly lengthened exposure times. The appropriate control stimulus slide was inserted into the tachistoscope. The experimenter said:

"In a moment, I will be showing you a stimulus slide with a printed phrase on it. I would like you to tell me when you see anything other than a flash of light and when you can read the phrase or any part of it."

The exposure time of the stimulus presentation was increased in 5 millisecond intervals on each exposure. Exposure lengths were recorded for the time required to see something and to read something. This was the first control measure to ensure that the subject could not read the stimulus phrases under the subliminal conditions. After this, the experimenter said:

"Now, I will show you the printed message so that you can read it. I would like you to read it aloud and tell me what comes to mind. What comes to mind when you read this?"

The subject was then given a 10 second exposure of the control stimulus message and associations were gained. This was done to assure that the control message phrase was "neutral" in nature and did not produce associations which were libidinal, aggressive or symbiotically related.

The experimenter then said:

"In a moment I will be showing you 10 exposures. Some of these will say _____ (appropriate control stimulus), the others will be another phrase. I will show you the stimulus one exposure at a time. After each exposure, I would like you to tell me if it said _____ (appropriate control stimulus) or the other message. When we are done with the 10 exposures, I will ask you what the other phrase said. If you can tell me, you will win 20 dollars. Ready? Three, two, one . . ."

Ten discrimination trials were given in the order specified in Appendix E. Following the series of trials, each subject was asked what the other message was. These responses were recorded. This was designed to assure that the subjects could not discriminate between the critical and control messages under the subliminal conditions.

Following this, the experimenter said:

"I am going to show you the critical stimulus phrase so that you can read it. Please read it aloud and tell me what comes to mind."

The subject was then given a 10 second exposure of the appropriate critical stimulus and the associations were recorded. Three more 10 second exposures followed. After these exposures, the subject was again asked to rate his mother on an ICL form. Following this, the subject received four more 10 second exposures and was asked to rate himself on the appropriate ICL form. The instructions and procedures employed during this superliminal exposure rating were identical to those employed in the subliminal ratings except for the duration of the stimulus exposure. This third set of ratings was obtained in order to assure that the effects found under the subliminal conditions were due to the presentation of stimuli messages which were out of conscious recognition and not due to the message content itself.

After finishing the final ICL ratings, the subject was debriefed and all questions were answered. Subjects were asked not to discuss the experiment with others who were yet to participate. Each subject was offered a copy of the abstract of the finished study. Those who wanted a copy supplied their names and addresses on a separate form.

Table 2 presents a summary flow chart of the procedures employed for data collection in this study.

Table 2

Summary Flow Chart of Procedures and Data Collection

Session 1

Informed consent
 Mental status, psychiatric history, reading habits interview
 Sham recall (priming) story read to subject
 Subliminal tachistoscopic stimulation (see Table 1 for stimulus used)
 ICL rating of mother
 Subliminal tachistoscopic stimulation (same stimulus as above)
 ICL rating of self

Session 2 (one week later)

Recall of sham recall (priming) story
 Subliminal tachistoscopic stimulation (see Table 1 for stimulus used)
 ICL rating of mother
 Subliminal tachistoscopic stimulation (same stimulus as above)
 ICL rating of self
 Exposure time discrimination task
 Associations to control stimulus message
 Control-critical message discrimination task
 Associations to critical stimulus message
 Superliminal tachistoscopic stimulation with critical message
 ICL rating of mother
 Superliminal tachistoscopic stimulation with critical message
 ICL rating of self
 Debriefing of subject

CHAPTER 5

RESULTS

Each subject provided maternal and self ICL ratings on three occasions in the course of this study. One of these ratings following the subliminal tachistoscopic presentation of the critical stimulus message. A second rating followed the subliminal presentation of the control message. A third rating followed the superliminal presentation of the critical stimulus message, serving as a control measure. Each rating provided four ICL scores; DOM and LOV scores for the maternal description and DOM and LOV scores for the self description. The differences between the control (C) scores and their corresponding critical or experimental (E) scores were computed to obtain difference (d) scores, reflecting the splitting effect for each subject.

Table 3 presents Mean Difference (D) scores and standard deviations for each group's obtained distribution. Wilcoxon Signed-rank tests were computed for each group and subgroup. Table 4 presents the results of this analysis.

These results suggest that splitting, as operationally defined, was induced under the combined Libidinal, combined Aggressive and Symbiotic subliminal conditions. The experimental effect found in the two combined groups was carried by the "object-directed" subgroups, with the "nonobject-directed" stimuli failing to produce significant findings.

Table 3

Mean Difference Scores and Standard Deviations for Splitting Effect (E-C)

Group	<u>n</u>	Mother			Self		
		DOM	SD	LOV	DOM	SD	LOV
1. LO	8	-4.625	6.045	10.75	.625	5.530	.750
LG	8	-.75	2.121	-1.13	1.875	5.330	-1.250
Combined	16	-2.06	3.21	4.31	1.25	5.290	-.250
2. AO	8	-2.00	9.319	1.75	-3.125	2.997	-3.625
AG	8	.395	7.032	1.37	-1.375	2.825	.625
Combined	16	-1.312	7.997	1.56	-2.250	2.995	-2.188
3. Sym	8	-1.875	5.660	-4.37	4.00	4.750	-8.125
LOS	8	2.750	6.880	-.75	-.875	7.679	-2.625
							4.830

Table 4

Wilcoxon Signed-rank Test Comparisons for Splitting Effects;
T Values and Associated Probabilities

Group	Mother			Self		
	DOM	P	LOV	DOM	P	LOV
1. LO	1.5	<.020	0.00	17.0	NS	13.5
LG	3.5	NS	8.0	9.5	NS	12.5
Combined	9.0	<.008	36.5	48.5	NS	51.5
2. AO	16.0	NS	9.5	3.0	<.020	1.5
AG	16.0	NS	7.5	9.0	NS	18.0
Combined	55.0	NS	32.5	22.0	<.008	35.0
3. Sym	14.5	NS	0.0	0.0	<.004	0.0
LOS	9.0	NS	12.5	11.5	NS	6.5

Inspection of Table 4 indicates that subjects in the combined Libidinal group described their mothers as being significantly less dominant and more loving and libidinally available following subliminal libidinal stimulation. No effect was found in the subjects' self description under these stimulus conditions. The effects of libidinal stimulation were clearly stronger in the "object-directed" subgroup than the "nonobject-directed" subgroup.

Under aggressive subliminal stimulation, subjects' maternal descriptions tended to remain consistent in the combined condition and both subgroups. Self descriptions in the combined group were significantly less dominant and less loving following the subliminal stimulation. Again, the experimental effect was substantially greater in the "object-directed" subgroup than in the "nonobject-directed" subgroup.

Subjects receiving symbiotic stimulation described their mothers as significantly less loving and libidinally available. No effect was found in terms of the maternal descriptions along the dominance dimension. These subjects described themselves as being significantly more dominant and less loving following the symbiotic stimulation. Loss of symbiosis stimulation produced no significant differences in either the subjects' self or maternal descriptions.

In terms of the operational definition of splitting, previously stated as a significant difference in the self and/or maternal ICL descriptions following the subliminal induced drive stimulation (critical message presentation) as compared to the ICL descriptions following the control message presentation, these findings indicate that

splitting can be induced in a normal population under several induced drive conditions. Further, splitting was observed following stimulation with Libidinal, Aggressive and Symbiotic stimulus messages. This finding contrasts with Kernberg's (1976, 1977) suggestion that splitting occurs as a response to only aggressive drive derivatives.

Of the three stimulus phrases which did produce significant differences in either the maternal or self descriptions, only the Symbiotic message produced a significant difference in both the self and maternal descriptions. The Libidinal and Aggressive stimuli produced differences in the maternal or self descriptions, but not in both, as the theory would predict.

Several previous studies (Silverman, Browstein, & Mendelsohn, 1976; Litwack, 1979; Dauber, 1980; Fribourg, 1981) have suggested that subject responsivity to subliminal stimulation is dependent upon whether or not the subject defends against the particular stimulus employed to stimulate the drive derivative. Therefore, associations to the critical and control stimuli were collected from all subjects and were rated by five judges, all Ph.D. level clinical psychologists, all of whom were blind to the experiment. Judges rated these associations as either being defensive or not defensive in nature. An interrater agreement rate (Chronbach, 1970) of 89% was obtained overall. Each association met the criteria of receiving at least four out of five ratings which were in agreement.

Point-Biserial correlation coefficients were computed on the basis of responsivity by defensiveness. Table 5 presents these coefficients

Table 5

Point-Biserial Correlation Coefficient (r_{pbi}) Comparisons
of Defensiveness to Responsivity by Groups

Group	Mother				Self			
	DOM		LOV		DOM		LOV	
	r_{pbi}	P	r_{pbi}	P	r_{pbi}	P	r_{pbi}	P
1. Libidinal (LO + LG)	-.1909	NS*	.3490	NS	.0668	NS	.2816	NS
2. Aggressive (AO + AG)	-.7607	.01	.2762	NS	-.0655	NS	-.1869	NS
3. Symbiotic (Sym)	.0504	NS	-.3432	NS	.1590	NS	-.3250	NS
Loss of symbiosis (LOS)	.0000	NS	.0000	NS	.0000	NS	.0000	NS

*NS = not significant at .05 level.
df = 15.

and their associated probabilities. One significant correlation was obtained, reflecting a relationship between a defensive association to the Aggressive stimuli and describing one's mother as being less dominant. Two facts cast doubt on this finding. First, this correlation was found on a variable which did not demonstrate a splitting effect. Secondly, a finding of one significant correlation out of the 16 performed is a chance finding in itself. On this basis, it can be argued that "defensiveness" to the stimuli was not a critical factor in accounting for the magnitude of the subjects' responsivity.

The quality of the subject's identification with his mother was a final area of interest. To approach this, Leary's index of identification was employed. Basically, once DOM and LOV scores were obtained for the maternal and self descriptions, octant scores are calculated for each. Leary provides a table with which octant scores can be compared (1957, pp. 498-499), resulting in a discrepancy (d) score, reflecting the amount of conscious identification between the subject and his maternal object. Small discrepancy scores reflect greater identification between the subject and his mother.

Discrepancy scores were obtained from each subject's data in the control and the critical ratings. The difference between these two scores formed a "difference in identification" score (Di). Wilcoxon Signed-rank tests were computed for each group and subgroup to test for changes in the subjects' identification patterns following exposure to the critical stimuli material. Table 6 presents the Signed-rank T values and associated probabilities for these comparisons. Inspection

Table 6
 Wilcoxon Signed-rank Test Comparisons for Differences
 in Identification between Mother and Self
 for the Critical and Control
 Stimulation Phases

Group		<u>T</u> values	<u>p</u>
1.	LO	7.0	NS*
	LG	9.5	NS
	Combined	43.5	NS
2.	AO	8.5	NS
	AG	2.0	NS
	Combined	18.0	NS
3.	Sym	7.0	NS
	LOS	3.0	NS

*NS = not significant at .05 level.

of these results supports the finding of no significant changes in the subjects' patterns of identification under any of the stimulus conditions.

Several control measures were included to ensure that the experimental effects were due to the subliminal nature of the stimuli presentation. During the discrimination trials in which subjects were asked to discriminate between a known control message and an unknown critical message, both presented under the subliminal conditions, only four subjects discriminated between the two at a better than chance level. Of these, three stated that they were using random guessing. The fourth described a coloration difference between the two stimuli, stating that one had a red tint. As the stimuli slides were printed in black and white, it is difficult to explain this perceived coloration difference. Overall, the finding of four subjects discriminating at a better than chance level is well within the range of chance expectation.

Following the discrimination task described above, subjects were asked to relate the critical message, with a 20 dollar reward being offered to subjects who could correctly do so. Although most subjects attempted to provide the critical message, none did so successfully. The results of these two discrimination tasks clearly indicate that the conditions employed in presenting the various subliminal messages provided stimulation which was not consciously perceived by the subjects. Even given strong incentive to read the stimulus phrase presented to them, no subject successfully could do so.

In a second series of discrimination tasks the exposure time was increased from the initial 4 millisecond exposure by 5 millisecond increments until the subject could (1) report seeing anything beyond a flash of light, and (2) could read the presented message. The average time of exposure required to see anything beyond a flash of light was 40.00 milliseconds ($Sd = 10.40$, range = 25.00-80.00 msec). To read the stimulus message, the average exposure required was 60.32 milliseconds ($Sd = 30.44$, range = 40.00-160.00 msec). Thus, the time required to consciously see any part of the stimulus (most commonly subjects reported seeing a line) was 10 times the actual experimental exposure time, while the average time required to read the stimulus message was 15 times the actual experimental exposure time.

Following the discrimination tasks, the subjects participated in an additional task, designed to investigate the possibility that the effects seen in the experimental manipulations might be due to the presence of an extraneous variable, namely that the subjects were being presented with messages which either told them that their mothers were "good" or "bad" rather than inducing drive states and associated conflicts. Subjects were presented with the critical stimulus which they had received subliminally. This presentation was superliminal, at an exposure duration of 10 seconds. ICL ratings were again obtained. Table 7 presents the results of Wilcoxon Signed-rank comparisons between the control session ICL ratings and the superliminal ICL ratings. No significant differences between these two sets of ratings was found. Inspection of the obtained $\bar{T}$ values reveals that each approaches the $\bar{T}$

Table 7

Wilcoxon Signed-rank Comparison of Splitting Effect for Superliminal Stimulus
Presentation versus Control ICL Ratings and Associated Probabilities
($\bar{T}$ values)

Group	Mother			Self		
	DOM	$\bar{P}$	LOV	$\bar{P}$	LOV	$\bar{P}$
1. LO	17.5	NS	16.5	NS	16.5	NS
LG	14.5	NS	15.0	NS	16.0	NS
Combined	59.0	NS	53.0	NS	51.0	NS
2. AO	13.5	NS	16.0	NS	17.0	NS
AG	16.0	NS	15.5	NS	16.0	NS
Combined	56.0	NS	45.5	NS	54.5	NS
3. Sym	15.5	NS	17.0	NS	17.0	NS
LOS	13.5	NS	15.0	NS	12.5	NS

value for a systematically distributed sample around a mean difference of zero. Thus, it can be concluded that the superliminal presentation ratings were essentially identical to the control ratings. In addition, subjects were postexperimentally divided into two groups of 24 each in accordance to their "responsivity" to the subliminal stimulus. The half of the subject pool which produced the greatest splitting effect (responders) were compared to those subjects who produced the least splitting effect (nonresponders) in terms of the difference between their control ICL ratings of their mothers and themselves and the ICL ratings obtained under the superliminal conditions. This was done to investigate several issues. First, this comparison allows conclusions to be drawn regarding the "neutral" quality of the control message. Secondly, this comparison allows the investigation of the possibility that subjects may have responded differently on both the subliminal and superliminal ratings. Table 8 presents Wilcoxon Signed-rank analysis of this comparison. Neither responders nor nonresponders produced significantly different ICL ratings under the superliminal and control conditions. Again, the obtained $\bar{T}$ values in each case closely approach the theoretical $\bar{T}$ value for a sample symmetrically distributed around a mean difference between the control and the superliminal ratings of zero. These last two findings regarding the lack of effect under superliminal presentation of critical stimulus messages suggests several conclusions. First, it supports the notion that the experimental effect was due to its subliminal presentation. Secondly, it suggests that the presentation of the various messages, in itself, does not account for

Table 8

Wilcoxon Signed-rank Comparison for Splitting Effect under Superliminal Conditions,
Superliminal versus Control Sessions, for Responders and Nonresponders
(T values and associated probabilities)

Group	Mother			Self		
	DOM	P	LOV	P	LOV	P
Responders	123.5	NS*	142.0	NS	124.0	NS
Nonresponders	149.0	NS	141.5	NS	147.5	NS
Combined	272.5	NS	283.5	NS	271.5	NS

*NS = not significant at .05 level.

the experimental effect. That is to say that the experimental results cannot be accounted for by an explanation that the subjects were told either "good" or "bad" things about their mothers. Thirdly, the superliminal presentation condition can be seen as providing evidence that the neutral message employed in the control sessions was indeed neutral. This conclusion is suggested from the finding that the neutral message stimulation produced the same effects as the superliminal stimulation. Previous studies (Cox, 1974; Lomangino, 1969; Rutstein & Goldberger, 1973; Silverman & Candell, 1970, Silverman & Goldberg, 1966; Silverman & Spiro, 1968) have consistently found no experimental effects from the superliminal presentation of stimulus material which produced significant effects when the stimuli were presented subliminally. Finally, the superliminal condition demonstrates a "return" to the "nonsplit" ICL ratings obtained in the control ratings. Thus, subjects have demonstrated "nonsplit" ratings, split ratings in the experimental condition and a return to the "nonsplit" ratings in the superliminal conditions.

Returning to the original hypotheses of this study, the following conclusions can be made:

Hypothesis 1. That splitting cannot be induced in a normal population, is not confirmed by these results. Splitting, as operationally defined, was seen to occur within the subject population employed in this study.

Hypothesis 2. That splitting does not occur following the attainment of object integration, is not confirmed by these results.

Splitting was induced in a population which would be expected to have attained object integration. Repression was not found to "replace" splitting, nor "mitigate" the experience of being "split."

Hypothesis 3. That the activation of aggressive drive derivatives constitutes the necessary and sufficient conditions for the subsequent act of splitting, is not confirmed by these results. Splitting was seen under several drive and conflict states including aggressive and libidinal drive states and symbiotic conflict states.

Hypothesis 4. That splitting occurs in the context of a constellation composed of object representations, a self representation and a linking affect, is not supported by these results. Rather, splitting was observed to be somewhat more specific in terms of what representation was split and what drive or conflict produced the split. Aggressive drive stimulation produced splitting of the self representation, Libidinal stimulation produced splitting of the object representation and Symbiotic stimulation produced splitting in both the self and object representations.

CHAPTER 6

DISCUSSION

Splitting, as operationally defined, was induced in normal subjects employed in this study under several different drive and conflict stimulation conditions. Normal subjects would be expected to have attained object integration and constancy along with the development of a repressive barrier at approximately 36 months of age (Kernberg, 1975, 1976; Mahler, 1975). These findings suggest that splitting does occur after object integration has occurred and directly addresses Pruyser's objection that "neither did we find evidence that anything alleged to be split really became split, for all the items mentioned had already been split before" (1975, p. 44). Subjects in this study demonstrated "object-integrated" or "nonsplit" ratings, split ratings in the experimental condition and a return to the "nonsplit" ratings in the superliminal condition.

Kernberg (1976) suggests that repression replaces splitting in normal development. Again, the repressive barrier forms during the 36th month of age (Kernberg, 1976; Mahler, 1975) and would be expected to be present in normal subjects. These findings suggest that repression does not replace splitting, nor does it "mitigate the experience of being split" as suggested by Grotstein (1981, p. 18). Numerous subjects involved in this study spontaneously commented on the difference in their feelings about themselves and/or their mothers after receiving

subliminal stimulation with a critical message phrase. Many suggested that feelings which they were experiencing at that point were unusual or that they were at a loss to explain the reason for their sudden shift of feelings. For example, one subject, after receiving the subliminal message "DESTROY MOMMY," stated, "I'm upset with my mother," but did not know why. Questioned about when she noticed that she was upset, she said, "I just realized it." Several subjects commented that they were rating themselves or their mothers differently than they had previously, without elaborating any further. Unfortunately, such comments were not expected and no method of recording or eliciting them was included in the experimental design. Future studies employing these methods might include a nondirective question such as "How are you doing" after each stimulation is given to the subject. Based on these comments, it appears that normal subjects have the capacity, however dimly, to recognize the difference in their feelings when objects are integrated and when they are split.

Several induced "drive states" were found to produce momentary and oscillating descriptions of the subjects' self and maternal object representations. Among these were Libidinal object-directed stimuli, Aggressive object-directed stimuli and Symbiotic stimuli. The splits produced in the case of the Libidinal and Aggressive stimuli conditions were found in either the self or the maternal representation, but not in both. Libidinal subliminal stimulation produced maternal descriptions which were significantly less dominant and significantly more loving, caring, concerned, etc. No effect on the subjects; self-representation

description was found under these stimulus conditions. In essence, under these stimulus conditions, a split which could be characterized as an idealization of the maternal object was obtained, that is, a representation which was loving, caring, giving, warm and gratifying without being engulfing. This is the mother who is libidinally available without being hovering or demanding, responding to the needs of the child rather than her own.

Under Libidinal stimulation, splitting was seen to take on a "projective" nature, focusing on the object representation exclusively. The opposite was the case under Aggressive stimulation conditions. With this stimulus condition, splitting takes on a clearly "introjective" nature, with the splitting effects seen only in the subjects' self representation. Under these conditions, subjects experience themselves as less dominant, less capable of taking action, less loving, caring and affiliative. The defensive aim of this self-representation is relatively clear, for it places the subject in a position to not act on aggressive impulses.

A splitting effect involving both self and maternal object representations was found under the subliminal Symbiotic stimulation condition. Maternal representations were reported to be significantly less loving, caring and warm. Self representations were reported as more dominant and assertive and less loving and dependent. These findings are also very understandable in terms of their defensive function for these subjects in particular. The subject pool consisted largely of young undergraduates who were experiencing their first major

separation from their home environments. By bolstering their own sense of independence and control and lessening both their libidinal attachments to their mothers and their view of their mothers' "lovability," they avoid anxiety over late adolescent issues of separation and entry into adult life.

The lack of significant effects found under the Loss of Symbiosis conditions suggests that this is not an active conflict among the subjects in this study. Assuming a normal population, the actual loss of symbiosis was mastered long ago and is no longer of major concern, as it would be for an individual with a Pre-Oedipal disorder. While this may appear to contradict the previous discussion regarding the effects of the symbiotic stimulus, it in fact does not. The feared threat of symbiosis inferred in this population is not the fear of reengulfment of the infant or of the schizophrenic, but a developmentally appropriate set of fears associated with the second separation-individuation period of adolescence. An actual threat of active reengulfment does not appear to accompany this set of conflicts, as object boundaries, particularly self-object boundaries are by and large intact in the population employed in this study.

In the case of the Libidinal and Aggressive stimuli conditions, the experimental effect was found either in the self or object representation but not in both. This finding is in sharp contrast with the commonly held theory which postulated splitting occurring along "self-object-affect constellations" lines (Kernberg, 1976, p. 29). Splitting, under these drive conditions and in this population was seen to occur in

respect to only one of the two "partners" in the "constellation" suggested by Kernberg. Kernberg goes further to suggest that these constellations form along "all good/all bad" lines, linked to the ego core and aggressive drive derivatives, respectively. This would imply an increased self/object identification following the act of splitting. Inspection of the patterns of identification comparing control session levels of identification to critical session levels of identification do not support this concept. That is to say, at least at the level of "normal" splitting, such splits do not "adjust" representations to form all good or all bad constellations in response to their postulated associated drive derivatives. Rather, these three stimulus conditions appear to lead to three distinctly different forms of splits. Libidinal stimulation leads to a split which appears to form a "purification" of the object, reflected in descriptions which are more loving, affectionate and caring while also being less aggressive, controlling and dominant. Aggressive stimulation resulted in self descriptions which were more hostile and aggressive but less capable of action. This type of split is suggestive of an introjection of rage, accompanied by a reduced ability to act on the rage in terms of discharging it into the external world. Symbiotic stimulation leads to a readjustment of representations which made the object less loving and desirable and the self less needy and less loving. Such a split might be seen as reducing the "pull" toward symbiosis. These latter findings should not be understood as necessarily offering a challenge to Kernberg's "self-object-affect" unit theory. Rather, these findings suggest that there

may be more than one form of splitting. This is considered more completely later in the discussion.

Examples of the types of "splits" obtained in this study are common in everyday experience. The idealization of a love object in the early stages of falling in love is an example of the split obtained under the Libidinal stimulation condition. Depression, classically held to be caused by the introjection of rage, is an excellent example of the self descriptions obtained in the group receiving the Aggressive subliminal stimulation message. Normal adolescent rebelliousness and its associated feelings illustrates the split found under the Symbiotic stimulation conditions. That normals engage in splitting appears strongly supported. The duration of these splits appear to be short lived, followed by rapid reintegration.

The finding that "non-object-directed" stimuli did not produce splitting can be understood by comparing the subjects' associations to the "object-directed" and "non-object-directed" stimuli. In the case of the former, the associations were exclusively related to the maternal object. In the case of the latter, associations tended to be more varied and more generalized. Further, associations to the "object-directed" stimuli tended to be somewhat more defensive. For example, a popular association to the message "DESTROY MOMMY" was "that's sick, who'd want to hurt their mother." Associations to the "non-object-directed message" "DESTROY PEOPLE" were commonly to wars or the then current Falkland Island crisis, much less specific. This lack of specificity appears to have allowed significant "displacements" to

occur, away from more threatening maternal related content to less specific, more distantiated content. This finding is reminiscent of Freud's (1905) observation that a drive has four characteristic features, a source, an aim, an impetus and an object. Stripped of an object "target," induced drives were free to be redirected in less anxiety-provoking directions.

A nonpsychoanalytic and possibly simpler explanation of these findings might be that the various stimuli which produced a splitting effect induced a particular, negative or positive, affective coloration which was reflected in the subsequent self and object ratings. A specific example might be the message "DESTROY MOMMY." It might be suggested that such a message would be, in effect, telling the subject that his mother is undesirable or bad, reflected in the subsequent rating of the mother. Such an explanation does not account for the specificity of the effects found with the various stimuli. That is, the Aggressive and Loss of Symbiosis stimuli, both of which could be considered as relating negative comments about the maternal object produced very different subsequent effects. In the same vein, the Libidinal and Symbiotic messages, both of which could be seen as inducing positive feelings for the object, produced quite different splits.

Further support for the position that the experimental manipulation was not simply a process of inducing a particular affect in relation to the maternal object is found in the lack of splitting effect found under superliminal presentation of the same stimuli which produced splitting

when presented subliminally. Simply put, the experimental manipulation was a more complex process than telling the subject that his mother was either good or bad and seeing these effects in the subsequent ratings.

Two subjects evidenced highly idiosyncratic reactions during the subliminal stimulus presentation. The first, a 30-year-old woman, developed a facial tic involving both eyes after receiving the message "MOMMY FEEDS ME WELL." Her association to the stimulus was to say in an irritated voice, "Her putting food on my plate, that really pisses me off, she forces herself on me like that." The subject's tic subsided within a few minutes after it developed. A second ideosyncratic reaction came from a 20-year-old woman who received the message "DESTROY MOMMY." Following two tachistoscopic presentations of this stimulus, the subject withdrew from the eyepiece of the tachistoscope, looking off into space, motionless. She remained mute and would not respond to her name despite several attempts to elicit a response from her. This state lasted for about one minute. When she became responsive, she stated she did not know what had happened but wished to continue with her participation. Later, when shown the experimental stimulus superliminally, her association, given at a pressured rate, was "that's sick, you're sick, makes me think of a movie, like Hinkley, no logical reason to want to hurt a mother, its like a plot from a movie, not real to me."

These two reactions are strikingly similar to those described by Reyher (1967) in his studies on hypnotic induction of conflict, in which libidinal and aggressive conflicts were hypnotically induced but not allowed either conscious recognition or expression. He too found

somatic reactions occurring in subjects under these conditions, including disturbances of "the muscular nervous system (stiffness, pain, tremors, etc.)" and "states of confusion, disorientation and dissociative reactions" (1967, p. 631). In both Reyher's studies and the present study, certain subjects appear to "act out" induced conflicts through bodily processes. Unfortunately, observation of subjects for possible somatic reactions was not designed into the present study. The two reactions which were observed were extreme, and because of their extreme nature, they were obvious. It would be of use if future studies using the methods employed in the present study inquired into the subject's condition following tachistoscopic stimulation using the nondirective method of Reyher, that is, asking the subject the question, "how are you doing?"

Two additional issues deserve attention in discussing this study. These issues are both related to the experimental application of psychoanalytic concepts through the use of an analogue model. In the following discussion the issue of the use of analogue studies is discussed in general terms regarding its assets and limitations. Following that, a discussion of a particular limitation pertinent to the present findings is discussed. This limitation is related to the operational definition of complex concepts of mechanisms of defense.

Psychoanalytic concepts in general and mechanisms of defense in particular, are complex and metaphorical notions which are difficult to operationally define and pursue in an experimental context. Such mechanisms occur in an inextricably interwoven fabric of an individual's

self experience. To isolate any one aspect of such complex functioning is to necessarily strip it of its richness reflected in the totality of its appearance in the phenomenological field.

Historically, the use of the case study or observational method has produced great growth in the development of psychoanalytic theory, based as it is, on years of broad clinical experience and insight. Such methods do have some implicit limitations in their use. Controls are difficult to maintain in such a method. Issues of observer bias, demand characteristics and the holding of extraneous variables constant while manipulating the variable of choice are examples. Such studies are difficult to replicate owing to the idiosyncratic nature of the data. Difficulties in assessing causality as well as in delineating the necessary and sufficient conditions underlying the appearance of a particular form of psychopathology are final areas of limitation in this method. Clinical evidence alone can not produce the link needed to consolidate the findings of psychoanalysis into the body of knowledge in general psychology.

The use of simulation or analogue studies is described by Holt as the "strategy of choice when we want to investigate conditions which are beyond our current reach in real life . . ." (1978, p. 143). Issues such as the causal link between the stimulation of drives and the emergence of a particular form of psychopathology is a prime example of conditions which are beyond real life observation. Although analogue approaches allow for many of the difficulties associated with the observational or clinical method to be overcome, it too has limitations.

Chief among these is that metaphorical and complex notions must be translated into concrete definitions which sacrifice the fullness of the concepts. A degree of loss of the individual's "self experience" follows. The level of behavior which is observed is generally altered. In this case, intrapsychic events were inferred through more behavioral, interpersonal events. Such data reflects the interaction between the individual and the external world rather than directly reflecting the individual's inner world. While it may be argued that some of the intricacy of concepts are lost through such a translation, it does point out the elegant interplay between the intrapsychic and the interpersonal; which is after all the realm of clinical psychology.

Understanding these limitations, analogue studies such as this are not meant as a substitute for clinical data taken from the treatment situation. Analogue studies serve to augment the clinical data by investigating limited and specific aspects of a broader, more elaborate theory.

One of the difficulties encountered in a study such as this arises out of attempts to operationally define complex and metaphorical concepts such as mechanisms of defense in concrete terms. The definition offered in this study was based on clinical observation as well as the theoretical definitions of Kernberg (1976, 1977), Lerner and Lerner (1980), and Stolorow and Lachmann (1980). Although the obtained results conformed with the operational definition, this definition did not exclude the possibility of other mechanisms of defense contributing to the descriptive differences found under the various drive stimulation

conditions. This should not be surprising, for Kernberg himself states, "Splitting does not appear as an isolated mechanism [of defense] but in combination with several others" (1975, p. 29). Some of the defense mechanisms which are found in combination with splitting are idealization, projection, denial, devaluation and introjection, among others. Several factors should be considered in regard to this possibility of other defense mechanisms entering into these findings. Defense mechanisms are often discussed as discrete, reified entities between which clear lines of demarcation exist. Such is not the case. Further, it may well be that multiple defense mechanisms occur simultaneously, making the identification of a single mechanism difficult. Definitions of defense mechanisms tend to be somewhat vague in nature, with the possibility that any given defensive behavior could be labeled in a number of different ways. For example, rather than understanding the changes found in the subjects' self descriptions following aggressive drive stimulation as evidence of splitting, one might suggest that mechanisms of undoing, reaction formation, denial or introjection had occurred. This multiplicity of possible understandings points to the need of not only more precise definitions of the various defense mechanisms but also the necessity of future experimental designs which control for the presence of such confounding variables.

A review of the literature on splitting points out clearly that more than one "form" or type of splitting is being discussed. Pruyser (1975) suggests that this fact implies that the concept of splitting is confused at best. Kernberg (1976, 1977) has elucidated splitting as it

applies to the borderline. Several authors (Stolorow & Lachmann, 1980; Grotstein, 1981; Mahler, 1975) have discussed a prestage form or precursor form of splitting. Bion (1950) and Rosenfeld (1959) have discussed a form of splitting found among schizophrenic patients which differs from the form of splitting seen in the borderline. The findings of this study suggest a "normal" form of splitting exists, again having features which are distinctly different from the three forms previously mentioned. The following discussion proposes an epigenetic relationship between these various forms of splitting.

Splitting may be seen as occurring on a continuum, in at least four distinct forms: (1) differentiation, (2) "primitive splitting," (3) "borderline defensive splitting," and (4) "normal" or "object constant" splitting. Each form appears associated with a distinct developmental phase, with differing aims and each occurring in differing forms. This proposed progression appears due to multiple converging factors of development including the development of boundaries, the acquisition of an evocative memory and differing major phase conflicts. Figure 1 graphically presents this hypothetical developmental continuum in terms of developmental phases, boundary development, the types of splits found in each phase, defensive aims and associated psychopathology of developmental arrests at each phase.

Using Mahler's (1975) research as a framework for this discussion, the initial prestage of splitting appears in the Autistic phase. The infant, in this period, is equipped with a small collection of biological readinesses such as the ability to suck, root, and cry.

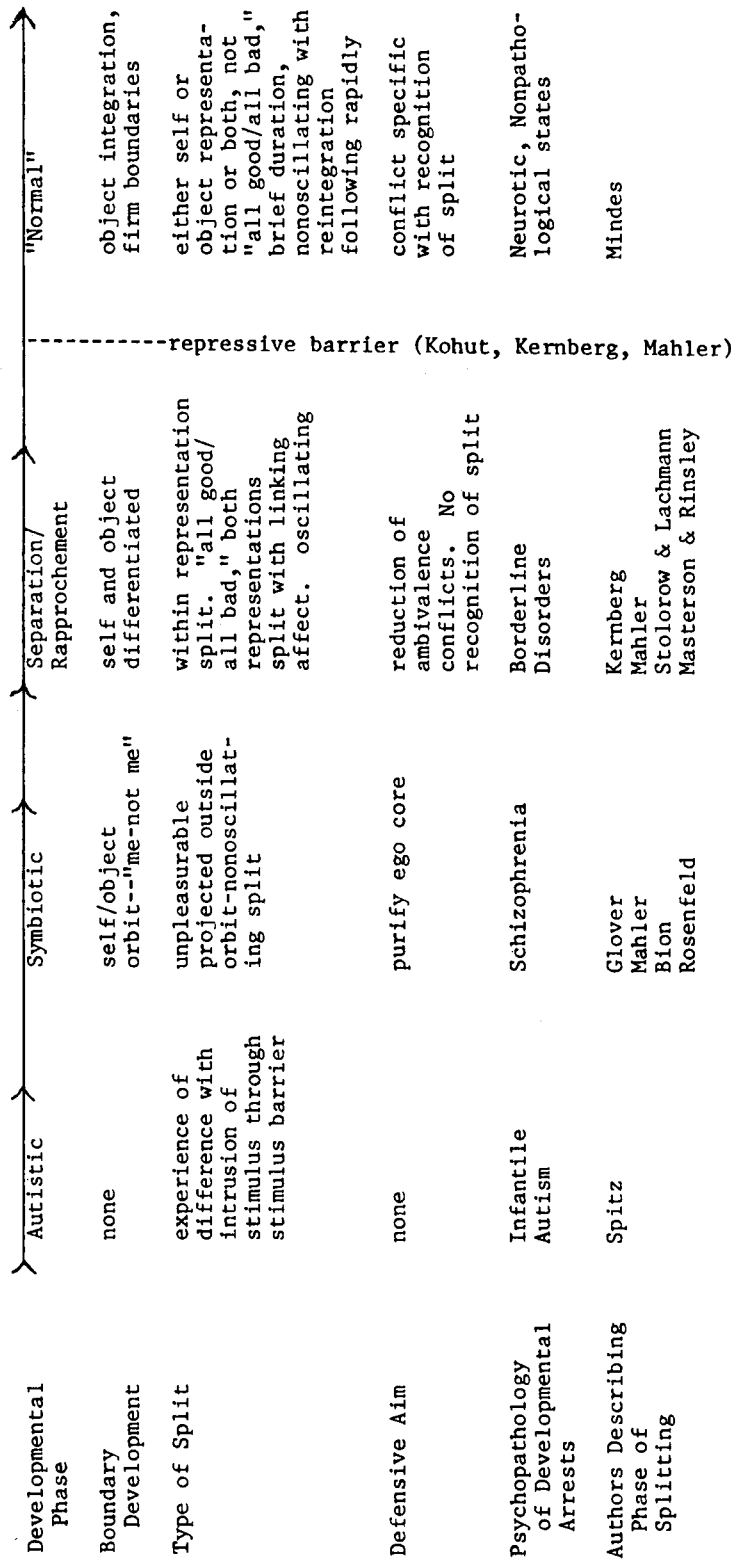


Figure 1. The ontogenesis of splitting: Differentiation to differentiation of defense.

Aside from these, the infant has a stimulus barrier, thought to be a physiological mechanism for screening out outside stimulation in order to protect the forming nervous system from being overpowered. Spitz reports that during this period, only maximal stimulation breaks through the stimulus barrier to be registered by the neonate (1961). So it appears that the infant is capable of tactile-sensory experiences, yet the stimulus must be in an extreme form.

Spitz (1961) and Mahler (1975) report that the infant spend its time in sleep or a sleeplike state, awakening only when hunger, thirst, or other noxious feelings arise, returning to sleep when the stimulus is removed. Thus, up to this point, the infant's experience of conscious existence is composed of these periods of "need" or discomfort. When the discomfort is removed, sleep is again attained. With the breakdown of the stimulus barrier by the intrusion of a loud or painful external stimulus, a contrast is introduced to the infant between a regulated, nonoverpowering state and an overpowering impinging state. One cannot suggest that the infant understands this, but only that the infant is exposed to a different experiential state even at this early stage. One can only imagine the experience of the infant who has experienced only the tranquil state which Winnicott referred to as "quiescent," when a stimulus loud enough or irritating enough to be registered by the nervous system has interrupted this quiescent state.

The point of this discussion is that the infant's first experience of "difference" probably occurs in the period between the first and sixth weeks of life with the breakdown of the stimulus barrier. This

breakdown is the precursor of the processes of differentiation and categorization and represents a prototype of splitting. These early discriminations form a necessary precondition for later discriminations of "me-not me," internal-external and "good-bad," discriminations which ultimately lead to the attainment of separation-individuation.

In the Symbiotic phase, with fused self/object boundaries, the differentiation of "inside vs. outside" in relation to the symbiotic orbit develops. Splitting, in this stage, takes a form in which "any unpleasurable percept [is] projected beyond the symbiotic milieu" (Mahler, 1975, p. 44). The aim of splitting in this form is the formation and protection of the purified pleasure ego. Rosenfeld (1950) points to the function of splitting during this stage as aiding the differentiation between libidinal and aggressive impulses and a developing differentiation between the real and the symbolic. Bion (1953) suggests that this sharpened sense of reality may lead to an increased use of splitting. This form of splitting might be referred to as a "cognitive split" in which the links between associations are attacked. These links are attacked because the increasing capacity for secondary thought "sharpens [the] awareness of depression which is linked to the destruction and loss of the good object" (1953, p. 26). The same form of splitting is seen by Bion in the schizophrenic. In addition, Bion sees object splitting occurring in the form of the projection of "cruel" or "bad" object fragments with an aim of ridding the ego core of destructive, death-instinct related impulses (1952).

Kernberg (1977) suggests that only "good" representations are introjected during this developmental stage, with "bad" representations being ejected. He views this "introjection-projection" cycle as eventually leading to the development of a differentiation between the "me" and the "not-me." Thus, splitting provides the infant with a "tool" for continued differentiation which allows it to progress to the next developmental stage, a stage marked by the differentiation of the "self" from "others."

Splitting, as seen in the Symbiotic phase, takes the form of projecting unpleasurable aspects of the "self/object" only. It is a nonoscillating form of splitting as opposed to the oscillating split found in the Separation subphase. This third form of splitting begins in the Hatching subphase and continues through the Rapprochement crisis. During this period, self and object boundaries coalesce. However, these representations are split along "all good/all bad" lines. In essence, this points to an increased ability on the part of the infant to tolerate the presence of bad object qualities in representations, so long as these qualities remain separate from good objects. Kernberg (1976, 1977) suggests that this form of splitting begins at 3 months of age, reaches its zenith at 12 months of age, and begins to disappear at 36 months, being replaced by repression.

Mahler (1975) places the time frame for this form of splitting somewhat later than Kernberg. She suggests that this "split object" form of splitting reaches its zenith during the Rapprochement crisis as the infant realizes its separateness from its mother. Mahler suggests

two possible reasons for this form of splitting. First, that memories are formed along the lines of a good, satisfying mother who is present versus an absent frustrating mother. The second possibility is that the absent mother is idealized and this ideal image is destroyed upon her return.

Masterson and Rinsley (1975) also place the time of this form of splitting in the Rapprochement subphase. They hold that such splits result from the infant's mother withdrawing her "libidinal availability" when her child attempts to individuate from her (1975, p. 165). The infant is rewarded for clinging behavior. Psychic structures develop out of this set of interactions, leading to the development of "unit" representations of the withdrawing and rewarding part-units. Rewarding part-units arise from memories of maternal availability and are characterized by object representations which are supportive, loving, and approving and self representations which are good, compliant, and passive. Withdrawing part-units arise from memories of maternal withdrawal. Maternal representations are characterized as being attacking, critical and rejecting, while self representations are bad, inadequate, and helpless.

Regardless of the timing or exact etiology of this form of splitting, each author agrees that this form of splitting takes an oscillating form. The overall aim of this form of splitting is the reduction of ambivalence conflicts. Whereas splitting previously served to "rid" the ego core of "bad" introjects, in this form of splitting the splits occur within representations.

Stolorow and Lachmann (1980) differentiate between what they refer to as a prestage of splitting, that is, splitting which occurs prior to object integration and defensive splitting, following the attainment of some degree of object integration. They suggest that the former takes the form of "fluid, rapid alternation of contradictory images in connection with the same external object" (1980, p. 98). The defensive form is seen as "all good" or "all bad" images which are "rigidly linked to two or more separate external objects" (1980, p. 98). This appears to be a transitional form of splitting, bridging the borderline form and the normal form found in this study.

With the firm development of object integration, a fourth form of splitting appears. In this form, splitting occurs in either self or object representation or both but it is not necessarily seen in the "self-object-affect" form of the borderline level split. This form of split appears to be shortlived, with reintegration of representations occurring rapidly. The defensive aims associated with this form go beyond the reduction of ambivalence conflicts found in the borderline form. In the "normal" form, the aims become more conflict specific, with the subsequent readjustment of representations offering anxiety reducing "solutions" to issues of a more developed nature than those of instinctual discharge or ambivalence. In the case of this study, the aims differed with each type of subliminal stimulus employed. Following Libidinal stimulation, the aim of the split appeared to be the "purification" of the object. The aim of the obtained split following Aggressive stimulation appeared to be related to the dealing of rage

through an internalization process. The aims of the splits found after Symbiotic stimulation appeared to be related to late adolescent issues of separation from the family into the adult world. In this split a self image of independence was developed while the object became less desirable. Subjects in this study appeared to have some awareness of the difference in their feelings under the split condition as compared to their nonsplit feelings. This is in sharp contrast to the form of splitting found in the borderline in which no apparent awareness of the differences in their feelings toward the split representation is found.

Rather than a pathology-specific defense of the borderline, splitting appears throughout the course of development in differing forms. Each form is associated with a specific developmental stage, particularly in relation to the boundary development associated with the particular stage. Grotstein's prediction that the "second hundred hundred years [of psychoanalysis] will be a history of splitting and projective identification" (1981) not only points to the importance of these concepts but also implies that a great deal of work is yet to be done before this important concept is fully understood. As a fuller appreciation of the role of splitting in pathological states as well as in everyday life is gained, the role of this basic psychological mechanism in both theoretical and clinical applications of object relations theory can be expected to gain a position of prominence.

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APPENDIXES

APPENDIX A

PRIMING INTERVENTION STIMULI

The stimulus stories employed in the sham recall task for the various conditions were:

Aggressive Condition

"Music student Renee Katz told a hushed courtroom yesterday that she did not see who pushed her from a subway platform into the path of an oncoming train that severed her right hand. She could not identify her assailant. She testified that she was standing on the platform when someone struck her from behind on the shoulder, knocking her on the tracks. Appearing slightly nervous, Renee relived the horror of the incident, in which her hand was severed at the wrist. It was reattached by surgeons and she has regained partial use of it. But she can no longer play the flute or piano--the instruments on which she excelled at the High School for Music and Arts."

Libidinal Condition

"Cleo the giraffe plants a proud maternal kiss on her little daughter Donna in their cage at the Bronx Zoo. Cleo gave birth last month, and she can hardly wait to show off her baby to the crowds of people who turn up at their home every day. Zoo officials say that Donna won't be seen by the general public until spring when she'll be grown up enough to stand the roar of the crowds. In the meantime, she's kept busy by her mom who can't seem to stop smooching and grooming her. If Cleo is any indication, the long-necked little ruminant will be holding her head high by the time of her debut."

Symbiotic Condition

"Chan and Eng Bunker were born in Maklou, Thailand (Siam) on May 11, 1811. Joined by a cartilaginous band at the chest. These were to become the most famous pair of Siamese twins in history. Their fame came from their world tours with the Ringling Brothers, Barnum and Bailey Circus. Both married in June of 1843, fathering 10 and 12 children respectively. They died within three hours of each other at the age of 65."

Loss of Symbiosis Condition

"Siamese twins successfully separated. A pair of Siamese twin boys were separated by surgeons yesterday less than three days after their birth by cesarean section. The twins, attached at the shoulder and waist, were separated during a six hour surgical session at a major medical center. Doctors would not name the twins or parents, hoping that the family would resume a normal and anonymous life."

APPENDIX B

ICL FORMS

ICL Form A

- | | |
|---|---|
| ☐ well thought of | ☐ always giving advice |
| ☐ makes a good impression | ☐ acts important |
| ☐ able to give orders | ☐ bossy |
| ☐ forceful | ☐ dominating |
| ☐ self-respecting | ☐ boastful |
| ☐ independent | ☐ proud and self-satisfied |
| ☐ able to take care of self | ☐ thinks only of self |
| ☐ can be indifferent to others | ☐ shrewd and calculating |
| ☐ can be strict if necessary | ☐ impatient with other's mistakes |
| ☐ firm but just | ☐ self-seeking |
| ☐ can be frank and honest | ☐ outspoken |
| ☐ critical of others | ☐ often unfriendly |
| ☐ can complain if necessary | ☐ bitter |
| ☐ often gloomy | ☐ complaining |
| ☐ able to doubt others | ☐ jealous |
| ☐ frequently disappointed | ☐ slow to forgive a wrong |
| ☐ able to criticize self | ☐ self-punishing |
| ☐ apologetic | ☐ shy |
| ☐ can be obedient | ☐ passive and unaggressive |
| ☐ usually gives in | ☐ meek |
| ☐ grateful | ☐ dependent |
| ☐ admires and imitates others | ☐ wants to be led |
| ☐ appreciative | ☐ lets others make decisions |
| ☐ very anxious to be approved of | ☐ easily fooled |
| ☐ cooperative | ☐ too easily influenced by friends |
| ☐ eager to get along with others | ☐ will confide in anyone |
| ☐ friendly | ☐ fond of everyone |
| ☐ affectionate and understanding | ☐ likes everyone |
| ☐ considerate | ☐ forgives anything |
| ☐ encourages others | ☐ oversympathetic |
| ☐ helpful | ☐ generous to a fault |
| ☐ big-hearted and unselfish | ☐ overprotective of others |

- | | |
|--|---|
| ☐ often admired | ☐ tries to be too successful |
| ☐ respected by others | ☐ expects everyone to admire him |
| ☐ good leader | ☐ manages others |
| ☐ likes responsibility | ☐ dictatorial |
| ☐ self-confident | ☐ somewhat snobbish |
| ☐ self-reliant and assertive | ☐ egotistical and conceited |
| ☐ businesslike | ☐ selfish |
| ☐ likes to compete with others | ☐ cold and unfeeling |
| ☐ hard-boiled when necessary | ☐ sarcastic |
| ☐ stern but fair | ☐ cruel and unkind |
| ☐ irritable | ☐ frequently angry |
| ☐ straightforward and direct | ☐ hard-hearted |
| ☐ resents being bossed | ☐ resentful |
| ☐ skeptical | ☐ rebels against everything |
| ☐ hard to impress | ☐ stubborn |
| ☐ touch and easily hurt | ☐ distrusts everybody |
| ☐ easily embarrassed | ☐ timid |
| ☐ lacks self-confidence | ☐ always ashamed of self |
| ☐ easily led | ☐ obeys too willingly |
| ☐ modest | ☐ spineless |
| ☐ often helped by others | ☐ hardly ever talks back |
| ☐ very respectful to authority | ☐ clinging vine |
| ☐ accepts advice readily | ☐ likes to be taken care of |
| ☐ trusting and eager to please | ☐ will believe anyone |
| ☐ always pleasant and agreeable | ☐ wants everyone's love |
| ☐ wants everyone to like him | ☐ agrees with everyone |
| ☐ sociable and neighborly | ☐ friendly all the time |
| ☐ warm | ☐ loves everyone |
| ☐ kind and reassuring | ☐ too lenient with others |
| ☐ tender and soft-hearted | ☐ tries to comfort everyone |
| ☐ enjoys taking care of others | ☐ too willing to give to others |
| ☐ gives freely of self | ☐ spoils people with kindness |

ICL Form B

- | | |
|--|---|
| ☐ gives freely of self | ☐ too easily influenced by friends |
| ☐ enjoys taking care of others | ☐ easily fooled |
| ☐ tender and soft-hearted | ☐ lets others make decisions |
| ☐ kind and reassuring | ☐ wants to be led |
| ☐ warm | ☐ dependent |
| ☐ sociable and neighborly | ☐ meek |
| ☐ wants everyone to like him | ☐ passive and unaggressive |
| ☐ always pleasant and agreeable | ☐ shy |
| ☐ trusting and eager to please | ☐ self-punishing |
| ☐ accepts advice readily | ☐ slow to forgive a wrong |
| ☐ very respectful to authority | ☐ jealous |
| ☐ often helped by others | ☐ complaining |
| ☐ modest | ☐ bitter |
| ☐ easily led | ☐ often unfriendly |
| ☐ lacks self-confidence | ☐ outspoken |
| ☐ easily embarrassed | ☐ self-seeking |
| ☐ touchy and easily hurt | ☐ impatient with other's mistakes |
| ☐ hard to impress | ☐ shrewd and calculating |
| ☐ skeptical | ☐ thinks only of himself |
| ☐ resents being bossed | ☐ proud and self-satisfied |
| ☐ straightforward and direct | ☐ boastful |
| ☐ irritable | ☐ dominating |
| ☐ stern but fair | ☐ bossy |
| ☐ hard-boiled when necessary | ☐ acts important |
| ☐ likes to compete with others | ☐ always giving advice |
| ☐ businesslike | ☐ big-hearted and unselfish |
| ☐ self-reliant and assertive | ☐ helpful |
| ☐ self-confident | ☐ encourages others |
| ☐ likes responsibility | ☐ considerate |
| ☐ good leader | ☐ affectionate and understanding |
| ☐ respected by others | ☐ friendly |
| ☐ often admired | ☐ eager to get along with others |
| ☐ overprotective of others | ☐ cooperative |
| ☐ generous to a fault | ☐ very anxious to be approved of |
| ☐ oversympathetic | ☐ appreciative |
| ☐ forgives anything | ☐ admires and imitates others |
| ☐ likes anything | ☐ grateful |
| ☐ fond of everyone | ☐ usually gives in |
| ☐ will confide in anyone | ☐ can be obedient |

- | | |
|--|---|
| ☐ apologetic | ☐ wants everyone's love |
| ☐ able to criticize self | ☐ will believe anyone |
| ☐ frequently disappointed | ☐ likes to be taken care of |
| ☐ able to doubt others | ☐ clinging vine |
| ☐ often gloomy | ☐ hardly ever talks back |
| ☐ can complain if necessary | ☐ spineless |
| ☐ critical of others | ☐ obeys too willingly |
| ☐ can be frank and honest | ☐ always ashamed of self |
| ☐ firm but just | ☐ timid |
| ☐ can be strict if necessary | ☐ distrusts everybody |
| ☐ can be indifferent to others | ☐ stubborn |
| ☐ able to take care of self | ☐ rebels against everything |
| ☐ independent | ☐ resentful |
| ☐ self-respecting | ☐ hard-hearted |
| ☐ forceful | ☐ frequently angry |
| ☐ able to give orders | ☐ cruel and unkind |
| ☐ makes a good impression | ☐ sarcastic |
| ☐ well thought of | ☐ cold and unfeeling |
| ☐ spoils people with kindness | ☐ selfish |
| ☐ too willing to give to others | ☐ egotistical and conceited |
| ☐ tries to comfort everyone | ☐ somewhat snobbish |
| ☐ too lenient with others | ☐ dictatorial |
| ☐ loves everyone | ☐ manages others |
| ☐ friendly all the time | ☐ expects everyone to admire him |
| ☐ agrees with everyone | ☐ tries to be too successful |

APPENDIX C

INFORMED CONSENT FORM

You are being asked to participate in an experiment which will attempt to investigate the Psycho-Analytic theory regarding the defense mechanism of "Splitting." Your participation will require your attendance at two sessions, about one week apart. Each session will take approximately 45 minutes. During the experiment, you will be asked to perform several tasks including recalling a newspaper story, describing your mother and yourself on a checklist and looking into a machine called a tachistoscope. A tachistoscope is a machine which allows visual stimuli to be presented at very short exposure times. In this case, the exposure will be so short that you will probably not perceive anything other than flashes of light.

Your participation in this study will be held in confidentiality. To accomplish this, you will be provided with a copy of this form with a number on it. This number will serve as your identification throughout the study. At no time will your name appear in conjunction with this number. Please bring this form with your identification number on it to both sessions.

Please understand that your participation in this study is voluntary and that you may discontinue at any time without penalty. We do not expect that your participation in this study will cause you any discomfort. If you do experience any discomfort which you feel is related to your participation in this study, you are encouraged to contact the experimenter at the phone number below. Your participation in this study will offer you an opportunity to view psychological experimentation first hand. Beyond this, no direct personal benefit to a participant is expected.

The experimenter will be happy to discuss the exact nature of this study with you following your participation and will attempt to answer any questions which you might have. If you desire, the experimenter will provide you with an abstract of this study. A separate sheet will be provided to you on which you can request an abstract by providing your name and address.

Your signature below indicates that you have read this consent form and consent to participate in this study.

Thank you for your cooperation,

David H. Mindes, Principal Investigator
3500 Sutherland C-209
Knoxville, Tennessee 37919

615/588-3217

Subject's Signature

Date

APPENDIX D

SUMMARY OF MENTAL STATUS EXAMINATION AND PSYCHIATRIC HISTORY AND CRITERIA FOR SUBJECT EXCLUSION

Present Dysfunction
Previous Dysfunction
Family History of Illness
Sensory Functioning
Motor Behavior
Affective Display
Mood
Speech
Intellectual Functioning
Orientation
Memory
Ideation
Hallucinations
Delusions
History of Drug or Alcohol Abuse
Past Object Relations Patterns
Present Object Relations Patterns--Interpersonal Functioning
Impulsivity
Identity
Suicidal Ideation
Homicidal Ideation
Judgment

Excerpts from Mental Status Manual, 1973, Sandoz Pharmaceuticals.

Criteria for Subject Exclusion

The criteria for exclusion includes:

1. DSM III criteria for Borderline Personality Disorder.
2. DSM III criteria for Schizotypal Personality Disorder.
3. DSM III criteria for Schizophrenic Disorders.
4. DSM III criteria for Paranoid Disorders.

5. DSM III criteria for Schizophreniform Disorder, Schizoaffective Disorder, Atypical Psychosis.
6. DSM III criteria for Major Affective Disorders.
7. Reports by the subject of past or present difficulties in reality testing including hallucinations, delusions, depersonalization states and severe fugue states.
8. Reports of neurotic psychopathology which has interfered with social or occupational functioning.
9. Blindness or severe uncorrected visual difficulties.
10. Subject's mother not living.

APPENDIX E

DISCRIMINATION TASK SCORING SHEET

S# _____

Cond. _____

Primed _____

Trial #

1. E _____
2. C _____
3. E _____
4. E _____
5. C _____
6. C _____
7. C _____
8. E _____
9. C _____
10. E _____

Other Message = _____

E = experimental subliminal stimulus.

C = control subliminal stimulus (People Walking)

VITA

David H. Mindes was born in Los Angeles, California, on August 27, 1954. He received a Bachelor of Arts degree in psychology from California State University at Northridge in 1976. In the fall of 1976, he entered the clinical psychology doctoral program at The University of Tennessee, Knoxville. He completed an internship at Nassau County Medical Center in 1981. He received a Doctor of Philosophy degree with a major in psychology in March 1983.