Effects of Stimulating Psychodynamically Relevant Unconscious Fantasies on Schizophrenic Psychopathology

by Eric Mendelsohn and Lloyd H. Silverman

Abstract

This article reviews a series of studies investigating the relationship between various unconscious fantasies and manifest pathology in adult schizophrenics. The results support the view that the activation of specific fantasies can lead to both the exacerbation and amelioration of symptoms in schizophrenia. The theoretical and clinical implications of the experimental findings are discussed, and suggestions for further research are offered.

The purpose of this article is to present the findings from a series of studies carried out over the past 15 years investigating the effects of activating certain unconscious fantasies on the manifest pathology of adult schizophrenics. The results indicate that when stimuli designed to activate psychodynamically relevant fantasies are presented subliminally (i.e., at 4 msec exposures) to schizophrenic subjects, temporary changes in the severity of psychopathology are reliably produced. These effects do not appear after the subliminal presentation of neutral control stimuli and typically do not occur following the supraliminal presentation of the same psychodynamically relevant stimuli. In this communication, our research method will be described, the studies reviewed, and the findings summarized. In the concluding section, the implications of these experiments for theory and clinical practice will be discussed and suggestions for further research made.

Let us state at the outset that when we speak of unconscious fantasies affecting schizophrenic pathology, we are not taking any position on the question of etiology, nor are we claiming that psychodynamic factors are the sole or even primary contributors to symptomatic changes in adult schizophrenics. Rather, we maintain that the experimental findings to be reported indicate that the activation of different unconscious fantasies can lead to both pathology exacerbation and reduction in schizophrenia, whatever the origins of the disorder and whatever other processes may underlie symptomatic changes. These findings can thus be viewed as consistent with the formulations of clinicians (e.g., Arlow and Brenner 1964, 1969; Searles 1965) who emphasize the importance of psychodynamic factors in schizophrenia. Moreover, the experimental data allow for a specification of which fantasies are most apt to be pathogenic and ameliorative, and underscore the importance of continuing to study the role of psychodynamic factors in schizophrenia (cf. Chodoff and Carpenter 1975).

Background and Experimental Method

In the early 1960s an experimental method, referred to as “subliminal psychodynamic activation,” was developed as a means of systematically studying the effects of stimulating unconscious fanta-
sies on behavior. The method derived from the pioneering work in the field of subliminal registration carried out by Poetzl in the early 1900s and by Fisher in the 1950s (Fisher 1954, 1956). Their studies, though often not well controlled, provided support for the hypothesis that visual stimuli, registering outside of awareness, can influence subsequent behavior. Later investigations, stimulated by Fisher's work, described conditions under which subliminal effects were most likely to occur (summarized in Dixon 1971). The "subliminal psychodynamic activation method" built on these findings and attempted to use the phenomenon of subliminal registration to stimulate the kinds of unconscious fantasies that psychoanalytic theory implicates in psychopathology. Soon the method was applied to the study of specific clinical psychoanalytic formulations concerning the relationship between particular unconscious fantasies and psychopathology in various clinical populations, including schizophrenics.

To date, over 50 studies have been reported (summarized in Silverman 1976, 1982) and several discussions of the implications of these findings for psychoanalytic theory have been presented (Silverman 1967, 1970, 1972, 1975, 1978b). Overall, the results indicate that the subliminal exposure of stimuli designed to activate psychodynamically relevant fantasies reliably affects levels of psychopathology in various clinical groups. Moreover, the results have been consistent with psychoanalytic formulations concerning the relationship between certain unconscious fantasies and psychopathology. In this report we focus on studies investigating such psychopathological changes in schizophrenics.

The following is a general description of the experimental method. For the most part, inpatients and day hospital samples were used and there was often much variability within and between samples as regards chronicity, symptomatology, and severity of dysfunction. Diagnoses were determined from information provided in hospital charts and by clinical staff with at least two independent diagnostic assessments required. In one recent study

"An unconscious fantasy can be defined as a configuration of unconscious ideas and images containing one or more of the following components: libidinal and aggressive wishes, anxieties stimulated by these wishes, and resulting defensive operations."

(Mendelsohn 1981), more stringent criteria were employed. Subjects were seen for an experimental and control session, usually on separate days, with the order of these counterbalanced. At the start of the first session, the subject was informed about the procedure and general purposes of the study, and rapport was established. He was then told about the tachistoscope, the machine used to present the subliminal stimuli. The subject was asked to describe what he observed each time he looked into the tachistoscope and was told that he would learn more about the purposes of this procedure at the conclusion of the experiment. After this introduction, a neutral "baseline" stimulus (verbal and/or pictorial) was exposed to the subject for 4 msec, followed immediately by assessments of ego pathology (usually measures of illogical, loose, or unrealistic thinking and measures of disturbed, inappropriate behavior). After these baseline data were gathered, there was a tachistoscopic exposure of the "critical" stimulus, either one designed to stimulate a psychodynamically relevant unconscious fantasy (experimental session) or one containing neutral content (control session). Following this, a reassessment of pathology using equivalent forms of the same tests used in the baseline series was made. In the second experimental session the same procedure was followed ex-
cept that subjects who were shown the fantasy-related stimulus in the first session were shown a neutral stimulus in the second, and vice versa. Neither the subject nor the experimenter was ever aware of the content of the stimuli during the experiment. The scoring of the dependent measures was also carried out blindly.

In these studies the blindness of the experimenter was ensured by having him use stimulus cards that were coded on the back. These were then assigned to subjects according to a code sheet prepared by an assistant. The cards were inserted into the tachistoscope without the content being exposed. The subjects’ blindness was ensured by having the stimuli exposed subliminally; this was operationally defined as a level (in terms of speed of exposure, illumination, and the qualities of the stimuli) where not only was there no recognition of any part of the stimulus, but where subjects were unable to distinguish exposures of one stimulus from those of another. That this state of affairs obtained was demonstrated in a large number of studies by administering a “discrimination task” at the end of the experiment proper. In this, as is detailed elsewhere (Silverman 1966, p. 107), subjects were asked to discriminate between exposures of one stimulus and those of another, with a monetary incentive offered to enhance motivation. Less than 10 percent of subjects (nonschizophrenics as well as schizophrenics) were able to discriminate at a rate better than chance, and the few who were (whose performance could simply be attributed to sampling error) have never accounted for the experimental effects.

The Stimulation of Aggressive Fantasies

The first group of studies we will report on are those investigating the effects of stimulating unconscious aggressive fantasies on cognitive and behavioral pathology in adult male schizophrenics. It was hypothesized, based on the views of certain clinical writers (Hartmann 1953; Bak 1954) that pathology would be exacerbated following the stimulation of aggressive fantasies. As is discussed elsewhere (Silverman 1973), this formulation is at variance with the views of other clinicians who discount the role of unconscious fantasies in mediating schizophrenic psychopathology (e.g., Freeman, Cameron, and McGhie 1958; DesLauriers 1962) or those who, while acknowledging that the activation of unconscious fantasies can exacerbate pathology, maintain that it is not specifically aggressive fantasies that have this effect (e.g., Searles 1965). The hypothesis was subjected to repeated experimental tests, both because of the controversial nature of the clinical formulation on which it was based and because of an interest in sharpening and refining the formulation by addressing such questions as the following: (1) Which schizophrenia are most strongly affected by the stimulation of aggressive fantasies? (2) Will the stimulation of other conflictual fantasies produce similar effects? (3) Can equivalent results be obtained with supraliminal instead of subliminal stimuli? (4) What forms of pathology will most likely be adversely affected?

The studies used the basic design described above. In the “critical” portions of each experiment, the effects of a subliminal aggressive stimulus (consisting of words and/or a picture) were compared to those of a neutral control stimulus. One aggressive stimulus used was the words DESTROY MOTHER, accompanied by a drawing of a man with a knife, his teeth bared, menacing a woman. The control stimulus was the words ARE WALKING accompanied by a drawing of two bland-looking male figures. There were usually two dependent variables; most often measures of nonverbal pathology and disordered thinking. Disordered thinking was assessed using a number of measures, including the Rorschach, Word Association Test, and a story recall task. These instruments provided measures of loose, illogical, and unrealistic thinking, scored according to Holt’s (1963) Primary Process Scoring Manual in the case of the Rorschach, and from manuals developed in our laboratory (available on request) for word association and story recall. Nonverbal pathology refers to any inappropriate or intrusive nonverbal behavior observed during the tests or other parts of the experimental procedure, the scoring criteria for which are also provided in a manual developed in our laboratory.

As can be seen in table 1, the subliminal presentation of aggressive stimuli produced significant increases in pathological thinking and/or nonverbal pathology when
Table 1. Studies assessing effects of aggressive stimuli on disordered thought and nonverbal pathology

<table>
<thead>
<tr>
<th>Study</th>
<th>n</th>
<th>Statistical value of difference score for disordered thinking</th>
<th>p</th>
<th>Statistical value of difference score for nonverbal pathology</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forest (1977)</td>
<td>30</td>
<td><em>t</em> = 1.82&lt;sup&gt;2&lt;/sup&gt;</td>
<td>&lt;.04&lt;sup&gt;4&lt;/sup&gt;</td>
<td>&lt;1</td>
<td>NS</td>
</tr>
<tr>
<td>Greenberg (1977)</td>
<td>24</td>
<td><em>t</em> = -2.46&lt;sup&gt;3&lt;/sup&gt;</td>
<td>&lt;.05&lt;sup&gt;5&lt;/sup&gt;</td>
<td><em>t</em> = &lt;1</td>
<td>NS</td>
</tr>
<tr>
<td>Leiter (1973)</td>
<td>60</td>
<td><em>t</em> = 1.98</td>
<td>&lt;.05&lt;sup&gt;4&lt;/sup&gt;</td>
<td><em>t</em> = 2.90</td>
<td>&lt;.005&lt;sup&gt;4&lt;/sup&gt;</td>
</tr>
<tr>
<td>Litwack et al. (1979)</td>
<td>30</td>
<td><em>F</em> = 1.41</td>
<td>NS</td>
<td><em>F</em> = 3.50</td>
<td>&lt;.07&lt;sup&gt;5&lt;/sup&gt;</td>
</tr>
<tr>
<td>Lomangino (1969)</td>
<td>24</td>
<td><em>t</em> = 2.99</td>
<td>&lt;.005&lt;sup&gt;4&lt;/sup&gt;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Loveland (1977)</td>
<td>20</td>
<td><em>F</em> = 4.41</td>
<td>&lt;.02&lt;sup&gt;5&lt;/sup&gt;</td>
<td><em>t</em> = &lt;1</td>
<td>NS</td>
</tr>
<tr>
<td>Silverman (1966)</td>
<td>32</td>
<td><em>t</em> = 1.90</td>
<td>&lt;.05&lt;sup&gt;4&lt;/sup&gt;</td>
<td><em>t</em> = 2.61</td>
<td>&lt;.01&lt;sup&gt;4&lt;/sup&gt;</td>
</tr>
<tr>
<td>Silverman et al. (1976)</td>
<td>30</td>
<td><em>t</em> = 3.13</td>
<td>&lt;.004&lt;sup&gt;4&lt;/sup&gt;</td>
<td><em>t</em> = 3.56</td>
<td>&lt;.002&lt;sup&gt;4&lt;/sup&gt;</td>
</tr>
<tr>
<td>Silverman and Candell (1970)</td>
<td>30</td>
<td><em>t</em> = &lt;1</td>
<td>NS</td>
<td><em>t</em> = 2.58&lt;sup&gt;2&lt;/sup&gt;</td>
<td>&lt;.01&lt;sup&gt;4&lt;/sup&gt;</td>
</tr>
<tr>
<td>Silverman et al. (1971)</td>
<td>48</td>
<td><em>t</em> = &lt;1</td>
<td>NS</td>
<td><em>t</em> = &lt;1</td>
<td>NS</td>
</tr>
<tr>
<td>Silverman and Spiro (1967)</td>
<td>40</td>
<td><em>t</em> = 3.18</td>
<td>&lt;.002&lt;sup&gt;4&lt;/sup&gt;</td>
<td><em>t</em> = &lt;1</td>
<td>NS</td>
</tr>
<tr>
<td>Silverman and Spiro (1968)</td>
<td>32</td>
<td><em>t</em> = 2.20</td>
<td>&lt;.02&lt;sup&gt;4&lt;/sup&gt;</td>
<td><em>t</em> = 1.80&lt;sup&gt;6&lt;/sup&gt;</td>
<td>&lt;.05&lt;sup&gt;4&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><em>t</em> = 1.78</td>
<td>&lt;.04</td>
<td></td>
</tr>
<tr>
<td>Silverman et al. (1969)</td>
<td>52</td>
<td><em>t</em> = 2.45</td>
<td>&lt;.01&lt;sup&gt;4&lt;/sup&gt;</td>
<td><em>t</em> = &lt;1</td>
<td>NS</td>
</tr>
<tr>
<td>S.E. Silverman (1969)</td>
<td>48</td>
<td><em>t</em> = 1.86</td>
<td>&lt;.05&lt;sup&gt;4&lt;/sup&gt;</td>
<td><em>t</em> = 4.12</td>
<td>&lt;.005&lt;sup&gt;4&lt;/sup&gt;</td>
</tr>
<tr>
<td>Spiro and Silverman (1969)</td>
<td>32</td>
<td><em>t</em> = &lt;1</td>
<td>NS</td>
<td><em>t</em> = 2.96</td>
<td>&lt;.005&lt;sup&gt;4&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

<sup>1</sup>The *t* values are based on the difference between change scores between the baseline and critical portions of experimental and control sessions. Net pathology increases were, for the most part, based on increases in pathology after the aggressive stimuli rather than decreases in pathology after the critical control stimuli.

<sup>2</sup>Used "earlier" and "later" ratings of pathology and obtained significance only on "later" ratings.

<sup>3</sup>Pathology decrease.

<sup>4</sup>One-tailed test.

<sup>5</sup>Two-tailed test.

<sup>6</sup>Not reported in original article.
compared to the effects of a neutral control stimulus in 13 of the 15 studies conducted using this paradigm.\(^5\) Studies in which such results were not obtained will be briefly discussed later in this section.

Let us now summarize the findings with respect to the questions posed above.

1. Which schizophrenics are most strongly affected by the stimulation of aggressive fantasies? Chronicity has been found to be positively correlated with susceptibility to subliminal aggressive stimuli; that is, the longer a schizophrenic has been hospitalized, the greater his tendency to demonstrate an increase in pathology following the aggressive condition (Silverman 1971; Loveland 1977). On the other hand, no consistent differences have been found between paranoid and nonparanoid subjects (Silverman and Spiro 1968; Lomangino 1969; S. E. Silverman 1970; Forest-Letourneau 1977). Further, Litwack, Wiedemann, and Yager (1979) found that when their subjects were dichotomized into groups with (a) high and low baseline pathology scores and (b) strong and weak defenses against aggression (as determined by their conscious associations to the aggressive stimuli after the experiment proper had been completed), those with high baseline scores and weak defenses carried the experimental effects. Coupling these findings with the results on chronicity noted above, it would appear that schizophrenics who are most susceptible to the activation of unconscious aggressive fantasies are those with the fewest adaptive resources, psychologically speaking.

2. Will other conflictual stimuli produce similar effects? Attempts have been made to determine whether it is only aggressive fantasies which, when stirred up, lead to increases in pathology in schizophrenics. In four studies (Silverman and Silverman 1967; Silverman et al. 1969; S. E. Silverman 1970; Silverman, Bronstein, and Mendelsohn 1976), other conflictual fantasy-related stimuli were tested along with aggressive stimuli, the former including stimuli with incestuous, exhibitionistic, and homosexual content. The results were that while the other fantasy-related stimuli sometimes affected measures of cognitive efficiency and nonverbal pathology, only the aggressive stimuli produced increases in thought disorder, a symptom that may be more specific to schizophrenia.

Also related to the question of the specificity of unconscious fantasies was a finding of Lomangino (1969). He examined the effects on disordered thinking in schizophrenics of two oral-aggressive stimuli and two aggressive stimuli without an oral element. Only the former produced a significant change on his dependent measures. This then led to an examination (Silverman 1975) of all the stimuli that produced effects in the studies reported in table 1; of the nine different aggressive stimuli that have been used, all were found to have an oral element (e.g., a lion roaring).

The question of the specificity of the relationships between unconscious fantasies and symptomatic changes was examined from another vantage point as well. The question asked was whether the same stimuli that produced increases in schizophrenic psychopathology would exacerbate symptomatology in other clinical groups. In one of the studies cited above (Silverman et al. 1976) it was found that a sample of schizophrenics showed increases in thought disorder and nonverbal pathology following exposure of the stimulus DESTROY MOTHER, but not after a stimulus designed to activate an incestuous fantasy. Conversely, in a sample of male homosexuals, the incestuous stimulus produced an intensification of homosexual feelings and anxiety while DESTROY MOTHER produced no change on either measure. In this same study DESTROY MOTHER did produce a pathology increase in a sample of depressed women, while a stimulus with anal content did not. On the basis of additional data from this and other studies, it was concluded that pathology intensifications can only be reliably produced by a subliminal stimulus whose content is relevant for the clinical group being studied. Consistent with predictions derived from psychoanalytic formulations, the oral aggressive stimulus produced exacerbations of pathology in depressives as well as schizophrenics.

3. Can equivalent results be obtained with supraliminal aggressive stimuli? By and large, the answer has been "no." Whereas
experimental effects regularly were obtained with subliminal aggressive stimuli, supraliminal exposure to the same stimuli only rarely produced effects. As has been discussed elsewhere (Silverman 1972), this can be attributed to the fact that the possibility of mastering disturbing mental content is considerably greater when a person is aware of what in his environment is eliciting it. In three studies with schizophrenics (Silverman and Spiro 1967; Lomangino 1969; Silverman and Candell 1970), a significant increase in pathology occurred after the subliminal presentation of an aggressive stimulus, while no effect was noted when the same stimulus was exposed supraliminally. In the studies in which supraliminal presentations of aggressive stimuli did produce increments in psychopathology, the results occurred in the context of modifications of the usual procedure. Thus in the study by Silverman and Spiro (1968), one of those just cited in which a supraliminal aggressive condition did not lead to an intensification in pathology, a second supraliminal aggressive condition did result in such intensification. However, for this latter condition, in contrast to the first, subjects were required to describe the aggressive picture that they saw. As is detailed else-

where (Silverman 1972), it was hypothesized that this interfered with the ability to master, through conscious fantasy expression, the aggressive ideas and feelings stirred up by the stimulus. In another study not listed in table 1 (Moriarty 1968), supraliminal aggressive stimuli produced pathological changes on some measures of cognitive efficiency. However, the author did not include tests of disordered thought and nonverbal pathology, the measures which typically carry the subliminal effect.

4. What forms of pathology will most likely be adversely affected? In the studies summarized in table 1, a variety of different dependent variables were employed. It was found that various measures of disordered thought, specifically, thinking that is loose, illogical, and disorganized, and the "nonverbal pathology" measure (i.e., behaviors that are inappropriate in the experimental setting or are otherwise disturbed) were most reliably affected by subliminal aggressive stimuli. Measures of "cognitive efficiency," usually assessments of the accuracy of a story recall or performance on Wechsler Adult Intelligence Scale (WAIS) subtests, only occasionally produced an effect (Silverman and Silverman 1967; Silverman and Spiro 1967, 1968; Moriarty 1968; Lomangino 1969; Spiro and Silverman 1969; S.E. Silverman 1970).

After the foregoing review of the major experimental findings, it is reasonable to consider the question of their reliability. There were two studies, one from our laboratory (Silverman et al. 1971) and one independent investigation (Greenberg 1977), in which subliminal aggressive stimulation did not intensify pathology in schizophrenic subjects. A post hoc explanation can be offered for each of these nonreplications, but we think the more important point is that 13 of 15 positive results compares favorably to other research on schizophrenia and establishes the finding under consideration here as reliable. However, it should be noted that this reliability only extends to the groups of schizophrenics tested; there were always a number of participants in each sample who did not demonstrate the experimental effect. Thus, it must be said that the formulation that we studied, namely,

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8In the study of Silverman et al. (1971), the absence of any findings after the aggressive condition was attributed in the original report to a procedural difference distinguishing this experiment from the others summarized in table 1. In Greenberg's (1977) investigation, on the other hand, as can be observed in table 1, there was a significant reduction in pathology following the subliminal aggressive stimulus, a paradoxical finding for which the author could offer no explanation. Greenberg kindly made available to the second author of the current article Rorschach responses (used as a dependent measure) that he had collected from his subjects. An examination of these suggested that the pathology reduction may have been a function of a general constricting that followed the aggressive condition. Perhaps then, Greenberg's subjects were of the more resourceful kind described earlier and were able to maximize their adaptive efforts in the face of threat, leading to fewer pathological expressions, but at the expense of ideational freedom. Obviously, this interpretation can be considered as no more than a speculation at present.

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that the activation of unconscious aggressive fantasies produces intensifications of psychopathology, has been demonstrated for some schizophrenics, but not for others. The findings on "adaptive resources" noted earlier offer the best lead, as of now, as to what differentially characterizes the two groups.

Summary

The "subliminal psychodynamic activation" method has enabled us to investigate and refine an important clinical psychoanalytic formulation concerning unconscious fantasies and intensification of pathology in schizophrenia. The results indicate that the activation of oral-aggressive fantasies produces (temporary) increases in certain types of pathology in groups of male schizophrenic subjects. Further, it has been found that libidinal stimuli may affect cognitive efficiency and/or nonverbal pathology, but only oral-aggressive stimuli produce increases in disordered thinking. That these results tend not to hold when experimental stimuli are visible to subjects is consistent with the view that once a stimulus that activates disturbing mental content reaches awareness, its status as a motivator may be diminished.

The Stimulation of Oneness Fantasies

The second series of studies we will review investigated the hypothesis that the activation of what has been termed a fantasy of "symbiotic-like gratification" (Silverman, Lachmann, and Milich, in press) may lead to clini-
cal improvement in schizophrenia. This (unconscious) fantasy can be defined as one in which certain representations (or aspects) of the self are merged with representations of an other. This "other" may be a currently significant figure that is unconsciously associated with the "good mother of early childhood." This hypothesis is grounded in psychoanalytic developmental psychology (Mahler 1968; Mahler, Pine, and Bergman 1975) and is supported by the reports of a number of clinicians (Harris 1974; Limentani 1956; Little 1960; Searles 1965) that schizophrenics often show improvement during psychotherapy after they give evidence of merging representations of themselves with representations of the therapist, the latter unconsciously perceived as the good mother of early childhood. This hypothesis is also a controversial one and runs counter to the suppositions of another group of clinicians (Freeman, Cameron, and McGhie 1958, 1966; DesLauriers 1962) who maintain that the merging proclivities of schizophrenics are the result of an unmotivated boundary disturbance. At least implicit in their formulation is the prediction that the gratification of wishes for oneness will prove antitherapeutic. Because these divergent hypotheses are of both theoretical and clinical importance, and because controversy about them is very much alive among clinicians, we attempted to examine them experimentally. The studies we will review assessed the effects of stimulating a fantasy of oneness gratification on disordered thinking and nonverbal pathology in adult male schizophrenic subjects. The experimental procedure was identical to the one described earlier, except that the crucial experimental stimulus was the phrase MOMMY AND I ARE ONE (with the assumption that the word "mommy" refers to the "good mother of early childhood") sometimes presented by itself and sometimes accompanied by a line drawing of a man and a woman partially joined together at the shoulders like Siamese twins. The prediction was that this stimulus would have a pathology-reducing effect when exposed subliminally to adult schizophrenics. As in many earlier studies, the control stimulus was usually PEOPLE ARE WALKING, either presented alone or together with a congruent picture in the studies where a picture accompanied MOMMY AND I ARE ONE. The dependent variables again usually were disordered thinking and nonverbal pathology.

The results of both our own studies and the replications by others are summarized in table 2. As can be seen, the hypothesis that the MOMMY AND I ARE ONE stimulus would prove ameliorative was borne out in 10 of 11 studies. Again, it should be noted that experimental effects in this group of studies were mild and short-lived.* In these investiga-

*The one nonreplication was the study by Loveland (1977) cited in table 1 as one of those investigations that replicated the finding that subliminal aggressive stimulation intensifies psychopathology. With regard to her nonreplication of the MOMMY AND I ARE ONE effect, Loveland pointed out that a variation occurred in the normal selection procedure for subjects, which may have prevented a replication. Moreover, as is discussed elsewhere (Silverman, Lachmann, and Milich, in press), the
tions, the following additional questions were addressed: (1) Is the schizophrenic's level of differentiation relevant to whether the gratification of symbiotic-like wishes will prove ameliorative? (2) How specific is the fantasy that leads to pathology reduction in schizophrenics? We will briefly take up these two questions in turn.

1. Is the schizophrenic's level of differentiation relevant to whether the gratification of symbiotic-like wishes will prove ameliorative? In the original study, the stimulus word "mama" rather than "mommy" is the standard term used by children to refer to their mothers in the South where Loveland's study was conducted. (All of the other studies listed in table 2 were carried out in the North.) Thus, it was posited that the word "mommy" did not have the same connotations for her subjects that it had for subjects in the other studies—that of the good mother of early childhood (Silverman, Lachmann, and Milich, in press).

Support for this interpretation was furnished by the finding that in the investigations carried out in the North, the MOMMY AND I ARE ONE stimulus, although equally affecting black and white subjects, did not affect Hispanic subjects who were raised in homes where English was not the language spoken during their infancy.

The results of one further study lend weight to the conclusion that pathology level can be affected by whether or not a schizophrenic fantasizes himself as experiencing symbiotic-like gratification. Litwack, Wiedemann, and Yager (1979) found that the stimulus I AM LOSING MOMMY, which can be viewed as activating a fantasy of frustrated wishes for oneness with mother, produced a significant increase in pathology.

MOMMY AND I ARE ONE produced a reduction in thought disorder that approached, but did not reach, significance (Silverman et al. 1969). However, a post hoc analysis was performed on the data and an interesting finding emerged. For a different purpose, each subject had been administered what came to be referred to as a "self-mother differentiation scale." This measure required the subject to rate himself for a series of 20 descriptive adjectives according to a 5-point scale. This measure was taken as a measure of self-mother differentiation.

In the initial study, when the differences in self- and mother-figure ratings were totalled, it was found that those subjects who scored as "relatively differentiated" (i.e., those in the upper half of the distribution when the scores were subjected to a median split) showed a significant reduction in disordered thinking following exposure to the oneness stimulus, while the "relatively undifferentiated" half of the sample did not. Silverman et al. (1969) then subjected this post hoc finding to a more stringent test by selecting a group of relatively differentiated subjects on this same scale (using the median split cutoff score from the original study as the criterion) and exposing them to the MOMMY AND I ARE ONE and control stimuli. The result was a significant reduction on the disordered thinking measure for the oneness condition.

Leiter (1973) attempted to replicate this finding and used samples of both relatively differentiated and undifferentiated schizophrenics. He found that the former showed significant reduction in disordered thinking following the oneness stimulus, while the undifferentiated subjects showed a significant pathology increase on the same measure. T. Spiro (1975) and Fribourg (1981) found no change for undifferentiated subjects, while replicating the pathology-reducing effect for differentiated schizophrenics. In all the other studies listed in table 2, only samples of relatively differentiated schizophrenics were used, and in all but one of these the pathology-reducing effect of the oneness stimulus was demonstrated. 10

Thus, the self-mother differentiation scale has proven to be a reliable predictor of response to the oneness stimulus.

In light of the differences that have been found in the responses of relatively undifferentiated and differentiated schizophrenics to the experimental stimulus, and bearing in mind the views of clinicians who consider the gratification of symbiotic-like wishes as antitherapeutic, the following formulation was proposed. We reasoned that the MOMMY AND I ARE ONE stimulus produced no improvement (and in one study, a pathology increase) in the undifferentiated subjects because such schizophrenics tend to experience the further merging of self-

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10 Again it should be noted that experimental effects in this group of studies have been mild and short-lived.
Table 2. Studies assessing effects of oneness stimuli

<table>
<thead>
<tr>
<th>Study</th>
<th>n</th>
<th>t value of difference score(^1) for disordered thinking</th>
<th>p</th>
<th>t value of difference score(^1) for nonverbal pathology</th>
<th>p</th>
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<td>Bronstein (1976)</td>
<td>30</td>
<td>2.93</td>
<td>&lt;.01(^2)</td>
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<td>NS</td>
</tr>
<tr>
<td>Fribourg (1979)</td>
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<td>2.23</td>
<td>&lt;.04(^2)</td>
<td>2.52</td>
<td>&lt;.03(^2)</td>
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<td>Kaplan (1976)</td>
<td>32</td>
<td>3.67</td>
<td>&lt;.001(^2)</td>
<td>1.86</td>
<td>&lt;.1(^2)</td>
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<td>Kaye (1975)</td>
<td>32</td>
<td>.409</td>
<td>NS</td>
<td>1.92</td>
<td>&lt;.05(^3)</td>
</tr>
<tr>
<td>Leiter (1973)</td>
<td>30</td>
<td>1.91(^4)</td>
<td>&lt;.05(^3)</td>
<td>1.70</td>
<td>&lt;.1(^3)</td>
</tr>
<tr>
<td>Loveland (1977)</td>
<td>20</td>
<td>1</td>
<td>NS</td>
<td>1</td>
<td>NS</td>
</tr>
<tr>
<td>Mendelsohn (1981)</td>
<td>54</td>
<td>1</td>
<td>NS</td>
<td>2.13</td>
<td>&lt;.025(^3)</td>
</tr>
<tr>
<td>T. Spiro (1975)</td>
<td>20</td>
<td>2.57</td>
<td>&lt;.025(^2)</td>
<td>1</td>
<td>NS</td>
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<tr>
<td>Silverman and Candell (1970)</td>
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<td>1.96</td>
<td>&lt;.03(^3)</td>
<td>1</td>
<td>NS</td>
</tr>
<tr>
<td>Silverman et al. (1971)</td>
<td>48</td>
<td>1</td>
<td>NS</td>
<td>2.40(^4)</td>
<td>&lt;.02(^2)</td>
</tr>
<tr>
<td>Silverman et al. (1969)</td>
<td>18(^5)</td>
<td>1.78</td>
<td>&lt;.05(^3)</td>
<td>—</td>
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</tr>
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</table>

\(^1\) The t values are based on the difference between change scores between baseline and critical portions of experimental and control sessions. Net pathology decreases were, for the most part, based on decreases in pathology after the oneness stimulus rather than increases in pathology after the critical control stimulus.

\(^2\) Two-tailed test.

\(^3\) One-tailed test.

\(^4\) Gave "earlier" and "later" dv's and obtained significance only on "earlier."

\(^5\) Initially a mixed group of 20 "differentiated" and "undifferentiated" subjects were studied. For this group there was a trend toward pathology reduction on the pathological thinking measure (t = 1.63, p = .05, one-tailed). When post hoc analyses indicated that level of differentiation was a crucial variable affecting responses to MOMMY AND I ARE ONE, a second sample of 18 "differentiated" subjects was run.
and object-representations that the stimulus activates as threatening their sense of self. Experimental data in support of this view were obtained in a study in which a new stimulus—the message I AM MOMMY—produced significant increases in pathology, even among relatively differentiated schizophrenics (Silverman 1970). This message was seen as activating a merging fantasy in which there is no distinction between self and mother. In light of these results we concluded that whether or not activating a fantasy of symbiotic-like gratification will prove ameliorative for a schizophrenic depends on the degree to which sense of self can simultaneously be preserved.

2. How specific is the fantasy that leads to pathology reduction in schizophrenia? Kaye (1975) varied the verbal stimulus to see whether the fantasy of oneness, in order to be ameliorative, had to have MOMMY as its object. To this end he compared MOMMY AND I ARE ONE with DADDY AND I ARE ONE and MY GIRL AND I ARE ONE. He found that the "mommy" and "my girl" messages produced improvement while "daddy" did not. One plausible interpretation of this finding is that for the oneness fantasy to be therapeutic, it must have as its object a (benign) maternal representation rather than a representation of any significant other.

Kaye's study, like all of those under discussion, involved male schizophrenics. Cohen (1977) for the first time used the experimental paradigm to study female schizophrenics. While the MOMMY AND I ARE ONE stimulus produced no effect, Cohen found that DADDY AND I ARE ONE reduced pathology for this group. In a very recent study (Jackson 1981), this result was replicated, as was the finding of pathology reduction with the MOMMY AND I ARE ONE stimulus with male schizophrenics. These findings, along with Kaye's (1975), suggest that the most desirable object of a oneness fantasy can vary among schizophrenics. The differences in responses between men and women may be accounted for by Lidz's (1973) observation that female schizophrenics often turn from mother to father as the object of symbiotic-like longings. Thus, for some subjects, words like "daddy" or even "my girl" may better connote the fantasized good mother of early childhood than does "mommy." Further research in this area is clearly needed.

In another group of studies in which the MOMMY AND I ARE ONE stimulus was analyzed, several investigators looked at the element of "oneness" to determine whether this was necessary to produce the experimental effect. Bronstein (1976) contrasted MOMMY AND I ARE ONE with stimuli designed to activate different internalization fantasies. Using Schafer's (1968) definitions of internalization, he compared the stimuli MOMMY IS INSIDE ME (introjection), MOMMY AND I ARE THE SAME (sameness identification), MOMMY AND I ARE ALIKE (likeness identification), and MOMMY AND I ARE ONE (oneness identification) with a neutral control stimulus. Bronstein found that while the "oneness stimulus" produced the same pathology reduction reported in earlier studies, none of the other internalization messages had this effect.

In another study, Kaplan (1976) tried to determine if, in addition to the oneness fantasy, other kinds of gratifying or reassuring fantasies involving "mommy" were ameliorative. To this end she presented MOMMY AND I ARE ONE, the neutral control stimulus, and MOMMY IS ALWAYS WITH ME (reassurance against separation anxiety), MOMMY FEEDS ME WELL (oral gratification), and I CANNOT HURT MOMMY (reassurance against the harmful effects of aggressive wishes). Again, only the oneness stimulus produced a significant reduction of pathology.

On the other hand, Fribourg (1981) found that the stimulus MOMMY GIVES ME EVERYTHING led to improvement on the nonverbal pathology measure but not on the measure of disordered thought, whereas MOMMY ARE I ARE ONE produced improvement on both measures. She concluded (taking into account the findings of Bronstein and Kaplan discussed above, as well as her own) that it may be only the oneness fantasy that is ameliorative for thought disorder, a symptom that may have more specificity for schizophrenia than nonverbal pathology. This conclusion is consistent with the results of a recent study by Silbert (1982). He found that while the MOMMY AND I ARE ONE stimulus reduced thought disorder, the other stimuli he was investigating—MOMMY AND I ARE ALL, I MAKE MOMMY WHOLE, and MOMMY HOLDS ME SAFELY, while affecting other measures, had no effect on disordered thought.
One other study warrants description here. Mendelsohn (1981) tested the effects of three stimuli on relatively differentiated male schizophrenics: MOMMY AND I ARE ONE, MOMMY AND I ARE TWO, and a control. Each of the first two stimuli was accompanied by a picture of a man and a woman—in the former condition, joined at the shoulders, while in the latter, simply next to each other. Both MOMMY stimuli led to reduced pathology, and interestingly, the TWO stimulus produced a significantly greater effect than the ONE stimulus.

Does this finding contradict the conclusion that it is specifically a fantasy of oneness that is most ameliorative for relatively differentiated schizophrenics? We do not think so; rather, we think this finding adds to our understanding of the therapeutic effects of symbiotic-like fantasies. When associations were obtained to both MOMMY stimuli (i.e., both the messages and the accompanying pictures) from a number of the subjects after the experiment was completed, it was found that many of the associations to MOMMY AND I ARE TWO had much in common with those to MOMMY AND I ARE ONE. That is, the TWO stimulus, rather than eliciting associations pertaining to the frustration of symbiotic-like longings, as it had been thought beforehand it might, instead stimulated ideas about togetherness and even a figurative oneness. At the same time subjects often gave associations suggesting they felt protection against identity loss.\(^{11}\)

\(^{11}\) A related finding, and one very relevant to this discussion, recently emerged from a subliminal psychody-

From this it would seem that the MOMMY AND I ARE TWO stimulus activated a fantasy involving oneness elements, but one which allowed for greater differentiation from the mothering figure. That is, in keeping with the point made earlier about oneness fantasies being potentially threatening as well as gratifying, the TWO stimulus (at least when accompanied by the picture that was described) seemingly had the effect of providing a symbiotic-like gratification while avoiding a mobilization of threat to sense of self. Further study of this possibility is being planned.

One final note about the issue of specificity. Earlier we presented findings indicating that stimuli such as DESTROY MOTHER did not produce pathology intensification in all clinical groups, but only in groups such as schizophrenics and depressives in which a connection is postulated between oral aggressive fantasies and psychopathology. A different situation has been found to obtain with the oneness stimulus. Results from many studies (summarized in dynamic activation study involving nonschizophrenics. Dauber (1980) found that MOMMY AND I ARE TWO, accompanied by the same picture that Mendelsohn used, was ameliorative for a group of depressed college women. The more important finding from this study, however, was that when Dauber collected associations to the stimulus after the experiment proper had been completed, he was able to divide his sample into subjects whose associations referred to themes of separation and alienation on the one hand and themes of togetherness and figurative oneness on the other. It was only the latter subgroup that carried the experimental effects.

Silverman 1978b; Silverman, Lachmann, and Milich, in press) indicated that the activation of symbiotic-like fantasies (especially when the experimental stimuli have been exposed repeatedly over a period of several weeks) produced pathology reduction in several different clinical groups and generally enhanced adaptation in a number of nonclinical samples. See Silverman, Lachmann, and Milich (in press) for further discussion of these findings.

Summary

The results presented in this section indicate that the stimulation of a fantasy of symbiotic-like gratification reliably produces temporary symptomatic improvement in samples of “differentiated” adult male schizophrenics. Earlier we reported that increases in pathology were obtained in schizophrenics after exposure to a variety of fantasy-related stimuli, but only oral aggressive stimuli produced increases in thought disorder. Analogously, whereas recent data suggest that several gratifying fantasies may produce ameliorative effects, only stimuli that activate fantasies of symbiotic-like gratification have affected disordered thinking.\(^{12}\) The results also suggest that the ameliorative effect of the oneness fantasy is conditional because it may have disturbing as well as therapeutic connotations. Several studies designed to identify the conditions under which the oneness fantasy is ameliorative and to determine, specifically,

\(^{12}\) See Silverman (1970) for a rationale based on psychoanalytic theory to account for the link between thought disorder and activated oneness fantasies.
what therapeutic elements are associated with it have yielded data indicating that it may be ameliorative under some circumstances and disturbing under others. The crucial variables seem to be the level of differentiation of the schizophrenic and the degree to which self- and mother-representations are merged in the fantasy. Further work to identify critical therapeutic factors is clearly needed.

**Discussion**

In this article we have summarized a series of experiments demonstrating that certain behavioral and cognitive disturbances typically manifested by schizophrenics can be reliably—if only temporarily—modified via the stimulation of psychodynamically relevant unconscious fantasies. We believe these results have theoretical and clinical importance. In terms of theory these experiments are relevant to the debate that has taken place in recent years among members of the mental health community (Silverman 1975) as to what role, if any, psychodynamic variables play in affecting the primary psychopathological manifestations of schizophrenia. We believe the data are supportive of the formulations of those who maintain that schizophrenic symptoms are at least partially mediated by unconscious conflict (Arlow and Brenner 1964, 1969; Searles 1965). In some instances the results are counter to the formulations of other writers who maintain that while schizophrenics, like all people, have unconscious conflicts, these do not, as a rule, bear significantly on their schizophrenic symptoms (DesLauriers 1962; Holzman 1975; Wexler 1975). While the experimental data do not, by any means, preclude the presence of preexisting or concurrent constitutional deficits, they are consistently supportive of particular psychodynamic formulations. One way of integrating these findings with current knowledge about etiology would be to say that for reasons that may relate to the existence of innate deficits, or adverse experiences early in life, or both, schizophrenics are characterized by sensitivities to the stimulation of both aggressive and symbiotic-like fantasies. It remains the task of further experimental study to determine what subject and stimulus variables are most relevant to producing behavioral changes.

The studies that have been reported enable us to specify the kinds of unconscious fantasies that mediate symptomatic changes in schizophrenics. Two findings would appear to be of particular importance. As noted earlier, whereas the activation of libidinal fantasies can intensify some kinds of pathology in schizophrenics, with regard to the specific symptom of thought disorder, only aggressive fantasies—and more specifically, oral-aggressive fantasies—produce pathology increases. And second, whereas the activation of certain unconscious fantasies involving gratification by the “good mother of early childhood” can ameliorate schizophrenic pathology, again with regard to the specific symptom of thought disorder, only fantasies related to oneness are mutative. Further, with regard to oneness fantasies, it appears that these will be ameliorative only when their presence does not threaten boundary loss. Thus, if either a schizophrenic is relatively undifferentiated from his mother, or if the oneness fantasy involves too many self-representations that are merged with mother representations, the consequences will not be positive.

Turning from theory to treatment, the data from the experiments on the oneness fantasy can be seen as having bearing on a controversy that has long existed in the clinical community. There has been one group of therapists (Sechehaye 1951; Limentani 1956; Little 1960; Searles 1965; Harris 1974) who see as a central task in the treatment of schizophrenics the therapist helping the patient to obtain in his relationship with him safe symbiotic-like gratifications. On the other hand, there has been a group (DesLauriers 1962; Freeman, Cameron, and McGhie 1958; Lidz 1973) who see as the central task the strengthening of “self-boundaries.” Whereas many of these clinicians (particularly those in the second group) seem to view these aims as antithetical, the findings that have been reported here suggest that this is not the case. That is, the many positive results with the MOMMY AND I ARE ONE stimulus indicate that oneness fantasies can indeed be ameliorative for schizophrenics; on the other hand, the results relating these findings to differentiation level, the pathology-intensifying effects found for I AM MOMMY, and the pathology-reducing effects found for MOMMY AND I ARE TWO indicate that the strengthening of self-boundaries also has a place in treatment. Thus the experimental data indicate there is validity to the views of both groups of clinicians cited above. As has been proposed in detail elsewhere (Silverman, Lachmann, and Milich, in press), perhaps the
therapeutic aims of fostering oneness experiences and enhancing sense of self can be reconciled by concluding that to the extent that boundaries are strengthened, the schizophrenic will feel more comfortable allowing himself oneness fantasies with their ameliorative consequences.

There is one other treatment implication of the studies involving subliminal symbiotic-like stimuli that we would like to propose tentatively. It relates to using the tachistoscopic intervention for activating oneness fantasies as a treatment aid. As we noted earlier, the symptomatic changes produced by the MOMMY AND I ARE ONE stimulus in the laboratory studies that have been described have been of very brief duration. However, two treatment studies (Milich 1975; Silverman et al. 1975) with schizophrenic subjects also have been carried out. The design of these was that each subject was seen for several sessions a week for 6 weeks. Subjects received regular “doses” of either the subliminal symbiotic-like stimulus or a subliminal control stimulus. These were administered in combination with other experimental therapeutic interventions such as a self-focusing procedure (designed to strengthen self-boundaries) and a guided fantasy technique. In one study (Silverman et al. 1975) the experimental group, when compared with the controls, showed significantly greater improvement on two of seven measures of “ego pathology” after the 6-week treatment period and produced a nearly significant difference in the number of rehospitalizations during a 9-month followup period. In the second study (Milich 1975) there was a replication of the initial (6-week) pathology reduction, though no significant group differences were found on followup after 2 months.

These results are admittedly weak. However, when they are considered in conjunction with five recent studies (Bornstein 1980; Bryant-Tuckett 1980; Linehan and O’Toole 1982; Parker 1982; Ariam and Siller, in press) demonstrating that, with nonschizophrenic populations, subliminal stimulation of oneness fantasies has produced powerful therapeutic effects, they suggest the possibility that the further development of this intervention may allow it to be of substantive value in the treatment of certain schizophrenics.

In closing, we would like to note the areas in which further research on subliminal stimulation of oneness fantasies with schizophrenics is most needed: (1) the investigation of subject variables affecting responses, such as subtype of schizophrenia, stage of illness, differentiation level, family history, the associations of subjects to the MOMMY AND I ARE ONE stimulus, and hemisphericity (a variable which may affect susceptibility to subliminal psychodynamic stimuli in general); (2) the further study of the specificity of the oneness stimulus, including an attempt to replicate Mendelsohn’s (1981) finding of pathology reduction with the “twoness” stimulus; and (3) investigations of whether increased dosage and variations in the wording of the oneness stimulus will increase the therapeutic impact of the intervention.¹⁴

References


¹⁴ Currently, a hospital study is being conducted (Cooper, in progress) in which four groups of schizophrenics are being compared. One is receiving standard dosages of neuroleptic medications and the other three have been temporarily withdrawn from medication and are instead receiving subliminal stimulation several times a day. For one of these groups a neutral (control) stimulus is being exposed, while for the other two, the stimuli are MOMMY AND I ARE ONE and MOMMY AND I ARE TWO, respectively. This is the first instance in which the “effect size” of this intervention is being compared to that of a known therapeutic agent.


Fribourg, A. Ego pathology in schizophrenia and fantasies of merging with the good mother. Journal of Nervous and Mental Disease, 169:337–347, 1981.


Silverman, L.H. "Ethical Considerations and Guidelines in the Use of Subliminal Psychodynamic Ac-


The Authors

Eric Mendelsohn, Ph.D., is Staff Psychologist, The New York Hospital-Cornell Medical Center, Westchester Division, and Instructor of Psychology (Psychiatry), Cornell University Medical College, White Plains, NY. Lloyd H. Silverman, Ph.D., is Research Psychologist, New York Veterans Administration Regional Office, and Adjunct Professor of Psychology, New York University, New York, NY.