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Does Repression Exist? Memory, Pathogenic, Unconscious and Clinical Evidence

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The current dispute regarding the existence of repression has mainly focused on whether people remember or forget trauma. Repression, however, is a multidimensional construct, which, in addition to the memory aspect, consists of pathogenic effects on adjustment and the unconscious. Accordingly, in order to arrive at a more accurate decision regarding the existence of repression, studies relevant to all three areas are reviewed. Moreover, since psychoanalysis regards repression as a key factor in accounting for the development and treatment of neurotic disorders, relevant research from these two domains are also taken into account. This comprehensive evaluation reveals little empirical justification for maintaining the psychoanalytic concept of repression.

Keywords: memory of trauma, neurosis, psychotherapy, repression, unconscious

Sigmund Freud (1914) viewed repression as the "foundation stone on which the whole structure of psychoanalysis rests" (p. 297). It is therefore no wonder that "Hundreds of psychoanalytic investigations have been interpreted as either propping up or tearing down this cornerstone" (Gur & Sackeim, 1979, p. 167). However, despite tremendous research efforts, the psychology community is polarized regarding the validity of this concept. On the one hand, in line with harsh criticism against psychoanalysis in general (e.g., Crews, 1998; Gross, 1978; Grünbaum, 1984, 1998, 2002; Macmillan, 1997, 2001), numerous investigators question the validity of repression, claiming that it needs to be abandoned (e.g., Bonanno & Keuler, 1998; Court & Court, 2001; Pendergrast, 1997; Piper, Pope, & Borowiecki, 2000; H. G. Pope, Oliva, & Hudson, 1999). On the other hand, psychoanalysis continues to be one of the central theories of psychopathology, and many investigators believe that repression is a valid concept (e.g., Bowers & Farvolden, 1996; Brown, Scheflin, & Whitfield, 1999; Cheit, 1998; Eagle, 2000a, 2000b; Talvitie & Ihanus, 2003; Westen, 1998a, 1999).

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The debate regarding the existence of repression has focused mainly on clarifying whether people remember or forget trauma (e.g., see reviews by Brown et al., 1999; Court & Court, 2001; Erdelyi, 2006; Piper et al., 2000; H. G. Pope et al., 1999). However, repression as portrayed in psychoanalytic doctrine and research literature is a multidimensional concept, composed not only of *memory*, but also of two additional equally important components. Psychoanalysis assumes that repression has a *pathogenic effect* on the individual's psychological and physiological functioning, preventing both an accurate perception of reality that is necessary for adequate coping and a discharge of harmful tension (e.g., Alexander, 1950; Dollard & Miller, 1950; Fenichel, 1946; S. Freud, 1926, 1936). An additional assumption is the existence of an autonomous *unconscious entity*, which activates the repressive process, preserves the anxiety-provoking contents, and controls the pathogenic manifestation of repression in the form of psychiatric disorders. (e.g., Fayek, 2005; Fenichel, 1946; S. Freud, 1915b; Wachtel, 1977). This multidimensional evaluation of repression enables a more accurate assessment of the empirical status of this concept.

Additionally, because psychoanalytic repression plays a central role in accounting for both the development and the treatment of neurotic disorders (Breuer & Freud, 1895; Fenichel, 1946; S. Freud, 1914, 1915a), a comprehensive

evaluation of repression also necessitates the examination of clinical evidence that assesses the utility of this concept in the understanding of neurosis. Accordingly, studies presented in this article relate to five critical aspects of repression: memory, pathogenic effect, the unconscious, and the role of repression in both the development and treatment of neurosis.

The Multidimensional and Clinical Evaluation of Repression

Memory

According to the psychoanalytic doctrine of repression, people have a tendency to forget trauma, and these traumatic experiences can be authentically retrieved by special means (e.g., see Breuer & Freud, 1895; Fenichel, 1946; Fischer & Pipp, 1984; Wachtel, 1977). Some investigators claim that studies that examine the memory component are irrelevant for evaluating the psychoanalytic concept of repression, as S. Freud (1915a) altered the focus of repression from memory to the inhibition of instinct (see Boag, 2006a). However, these findings need to be considered, because in the recent years the debate regarding the existence of repression has been focused almost entirely on the motivation of forgetting trauma (e.g., Brown et al., 1999; Court & Court, 2001; Erdelyi, 2006; Piper et al., 2000; H. G. Pope et al., 1999; Wilson & Dunn, 2004).

Contrary to the original psychoanalytic assumption (e.g., Breuer & Freud, 1895; Wachtel, 1977), a vast number of studies show that, in fact, trauma enhances memory (e.g., McNally, 2003; Piper et al., 2000; H. G. Pope et al., 1999). Although people sometimes display partial or temporary amnesia, some studies suggest that this may be the result of deliberate forgetting rather than repression (e.g., see M. A. Epstein & Bottoms, 2002; H. G. Pope et al., 1999). For example, Porter and Birt (2001) found that subjects who had forgotten traumatic life events reported that "they had consciously forced it out of their minds. . .rather than repressed it" (p. S112). Experimental studies indicate that intentional forgetting may be so strong that even monetary reward does not help to retrieve intentionally forgotten material (Anderson & Green, 2001). These findings are consistent with the claim of Loftus, Polonsky, and Fullilove (1994) that forgetting of trauma does not necessarily "involve a repression mechanism" (p. 73; see also McNally, 2003; McNally, Clancy, & Barrett, 2004).

An additional challenge to the psychoanalytic concept of repression concerns the assumption that repressed memories are preserved for an indefinite period of time, and can be recovered in their original form through special means such as hypnosis and psychoanalytic therapy (e.g., see Lynn et al., 2004; McNally, 2003). As noted by Wachtel (1977), "Freud was extremely impressed with the 'freshness' and vividness of the memories revealed after digging through the layers of resistance" (pp. 28–29). Although Freud abandoned hypnosis as a clinical tool (see Bachner-Melman & Lichtenberg, 2001), advocates continued to believe that hypnosis can retrieve authentic memories (e.g., see Brown et al., 1998; Kluft, 1999). Research has shown, however, that this retrieval method often yields confabulations, such as "memories" from previous lives (e.g., Ferracuti, Cannoni, DeCarolis, Gonella, & Lazzari, 2002; Gow, 1999). Similarly, a number of investigators argue that some psychodynamic therapists may place certain patients at risk for developing false memories (e.g., Gardner, 2004; Lynn, Lock, Loftus, Krackow, & Lilienfeld, 2003). This claim is strengthened by many studies demonstrating experimental production of false memories (e.g., Laney & Loftus, 2005; Loftus & Bernstein, 2005; Loftus, Nucci, & Hoffman, 1998; Mazzoni, Loftus, & Kirsch, 2001; Roberts, 2002). Some investigators even suggest a new category of behavioral disorder termed *false memory syndrome*, in which therapists allegedly cause patients to invent memories of sexual abuse that severely disrupt the individual's daily functioning (e.g., see Gardner, 2004; Kihlstrom, 1996). Although this diagnostic category is controversial (e.g., K. S. Pope, 1996, 1997), it has received some clinical validation (e.g., Kaplan & Manicavasagar, 2001), increasing skepticism regarding the authenticity of recovered repressed memories.

In an attempt to defend repression, advocates used clinical cases indicating that child abuse victims may become amnesic of their trauma and that therapeutic interventions may generate a genuine recollection of their repressed traumatic experiences (e.g., see Brenneis, 2000; Cheit, 1998; Kluft, 1995; Martinez-Taboas,

1996). Critics, however, discredit the scientific value of this evidence, claiming that it suffers from fundamental methodological flaws (e.g., McNally, 2003; McNally et al., 2004; Piper, 1999; H. G. Pope & Hudson, 1995). For example, in reevaluating 35 cases that Cheit (1998) employed to support repression of trauma, Piper (1999) arrived at the conclusion that these cases provide "no scientific evidence whatsoever" in support of the recovered memory. Piper noted that Cheit failed to address questions such as "did some traumatic event actually happen . . .and does either biological amnesia. . .or normal amnesia of childhood explain the lack of recall?" (p. 290). Although in some cases the authenticity of recovered memories was corroborated by other sources (e.g., Brenneis, 2000; Kluft, 1995; Martinez-Taboas, 1996), this does not necessarily prove the existence of repression. This may be the result of "false-positive" measurement error (H. G. Pope, 1997) or, as claimed by McNally (2003), such evidence may be either "seriously flawed or can be more plausibly explained in ways other than an *inability* to remember" (p. 227).

Advocates employed not only clinical evidence but also research findings that appeared to be consistent with the psychoanalytic position. In reassessing such studies, however, H. G. Pope and Hudson (1995) indicated that only four controlled, quantitative studies report evidence that seemingly supports repression (Briere & Conte, 1993; Herman & Schatzow, 1987; Loftus et al., 1994; Williams, 1994). Moreover, the authors demonstrated that even these four studies were methodologically flawed (see also Kihlstrom, 1998; McNally et al., 2004). For example, in Williams' (1994) study, women were interviewed 17 years after they had been medically treated for sexual abuse, which in many cases occurred when subjects were less than 5 years old. Hence, amnesia of the abuse may have been the consequence of normal forgetting or infantile amnesia. Moreover, subjects may have remembered the abuse well, but chose not to share their painful experiences with the interviewers. In support of this claim, findings indicate that subjects, who initially denied abuse experiences, admitted in the second interview that they actually remembered the incidents, but withheld this information during the first interview (della-Femina, Yeager, & Lewis, 1990). Similar arguments were made by McNally et al. (2004) with regard to a more recent study that reported findings that supposedly supported repression (Goodman et al., 2003).

In another attempt to support repression, Chu, Frey, Ganzel, and Matthews (1999) found that female inpatients who reported high levels of physical or sexual abuse had been completely amnesic to these experiences until they became spontaneously aware of these events. As noted by Piper (2000), however, there is no reliable evidence that abuse had occurred. The authors themselves acknowledged that the major methodological limitation of their study was "the use of retrospective self-report for memories of childhood abuse. . .[that] were potentially subject to distortions and inaccuracies" (p. 754). Even if abuse did occur, it is still possible that the forgetting occurred as a result of a deliberate, conscious effort rather than repression. Additionally, patients' assertions that recollection of childhood abuse was spontaneous in the absence of therapeutic intervention conflict with the psychoanalytic concept of repression (e.g., Brenneis, 2000; see also case studies by Grinker & Spiegel, 1945; Kluft, 1995). As noted by Boag (2006b), once repression has taken place, the knowledge of the repressed event would not be possible after the act. He added that the Freudian notion of resistance indicates that "repression is more than simply ignorance that can easily be corrected. . .Instead, resistance occurs despite S's 'conscious' intention to know the repressed" (p. 514).

In an additional study, Anderson and Green (2001) reported that subjects failed to remember neutral verbal stimuli after deliberately avoiding thinking about them. The findings were interpreted as providing a viable model of repression (see also Conway, 2001; Levy & Anderson, 2002). However, the forgotten material in this study was neutral words rather than traumatic or anxiety-provoking stimuli. Moreover, as stated by Kihlstrom (2002), the authors "referred to voluntary suppression, not unconscious repression" (p. 502; see also Kihlstrom, 2006). More importantly, the Anderson and Green findings could not be replicated, despite meticulous attempts to do so (Bulevich, Roediger, Balota, & Butler, 2006).

The most comprehensive attempt to defend repression was made by Brown et al. (1999). Reevaluating the 63 studies that H. G. Pope, Hudson, Bodkin, and Oliva (1998) employed to

negate the existence of repression, Brown et al. claimed that these studies were misinterpreted and that at least 9 of them support the existence of repression. Moreover, Brown et al. reviewed 68 additional studies, claiming that they provide further support for this concept. However, Piper et al. (2000; see also McNally et al., 2004) convincingly demonstrated that, in fact, it is Brown et al. who inaccurately reviewed studies supporting repression. For example, in reference to the aforementioned 9 studies, Brown et al. had claimed that in one case (Cardeña & Spiegel, 1993), 3–5% of subjects were amnesic of their trauma, when, in fact, such statistics were not mentioned. Similarly, although Brown et al. interpreted two cases of side-flash victims who suffered from amnesia as a reflection of repression (Dollinger, 1985), Piper et al. (2000) noted that it is more likely that this amnesia was the consequence of a neurological effect caused by the electric shock of lightning rather than repression. Piper et al. (2000) also claimed that the aforementioned 68 studies, which Brown et al. (1999) employed as evidence of repression, were actually the consequence of deliberate forgetting rather than of involuntary unconscious processes. In their concluding remarks, Piper et al. (2000) stated that Brown et al. (1999) attempted to portray repression "as something generally accepted by scientists. But in their paper, as in others like it, conceptual flaws, unsupported assertions, distortions of fact, false statements, and frank errors undermine the credibility of their conclusions" (p. 203).

Recently, Erdelyi (2006; see also Erdelyi, 2001; Erdelyi & Goldberg, 1979) claimed that Freud viewed repression as a conscious and deliberate process. Accordingly, the author maintains that deliberate forgetting may cause progressive degradation of accessible memory for the target material. However, this conceptualization of repression as a deliberate forgetting process has been criticized by a number of investigators, for both the lack of empirical support and the disregard of studies that question the existence of the psychoanalytic concept of repression (e.g., Bonanno, 2006; Crews, 2006; Kihlstrom, 2006). In this regard, McNally (2006) noted that by restricting repression to deliberate forgetting, Erdelyi "deprives it of its distinctive psychoanalytic character. . .Freud did not earn his reputation as a bold and original thinker by blandly affirming that people sometimes try not to think about unpleasant things" (p. 526; see also Bonanno, 2006; Crews, 2006; Kihlstrom, 2006; Macmillan, 2006). Furthermore, it is indisputable that Freudian repression has an inseparable connection with the unconscious (e.g., Fenichel, 1946; Kihlstrom, 2006; Langnickel & Markowitsch, 2006; Wilson & Dunn, 2004), and that both concepts are responsible for the production of neurosis, for patients' unawareness of the underlying causes of their deviant behaviors, and for their inability to resume normal behavioral functioning (Fayek, 2005; S. Freud, 1915a, 1915b; Macmillan, 2006). Accordingly, there seems to be no doubt that Freud and his followers assumed both the existence of an autonomous unconscious entity, and that the repressed materials exert negative impact on the individual's behavior. Thus, regardless of whether repression is a conscious or unconscious process, this concept becomes meaningless in the Freudian sense if its other two components are not empirically confirmed.

Conclusion

Contrary to psychoanalysis, most studies show that people remember their traumatic experiences and that rare cases of amnesia can be attributed to factors other than Freudian repression. Some investigators, however, defend repression by claiming that Freud altered its meaning from forgetting of trauma to the inhibition of impulse, or that repression can be viewed as deliberate forgetting. Therefore, studies evaluating the other two components of repression must also be considered before a conclusive statement regarding the existence of this concept can be made.

Pathogenic Effects

According to psychoanalysis, repression has a negative impact on the individual's adjustment, resulting in psychophysiological illnesses or neurotic disorders, not because of the forgetting of trauma or the inhibition of impulse per se, but rather because of two damaging consequences that the elimination of trauma or impulse from the conscious may cause (e.g., Alexander, 1950; Dollard & Miller, 1950; Eagle, 2000a, 2000b; Fenichel, 1946; S. Freud, 1915a, 1926, 1936). First, repression induces reality distortion, thus preventing effective problem

solving. Second, repression increases harmful tension that, if not discharged in socially acceptable manners such as verbal expression, may facilitate the development of psychophysiological diseases or behavioral dysfunctions. Studies assessing the pathogenic consequences of both effects are reviewed.

Reality Distortion

The two areas of research that may be relevant in evaluating the behavioral impact of reality distortion are concerned with repressive coping styles and an illusionary perception of the self. Psychoanalysis motivated investigators to develop self-report questionnaires to identify repressive coping styles, thereby examining the pathogenic effect of repression (e.g., Byrne, 1961; Weinberger, Schwartz, & Davidson, 1979). The validity of these scales is supported by findings showing that repressors report low levels of anxiety while exhibiting high physiological arousal (e.g., Byrne, 1964; Rohrmann, Hennig, & Netter, 2002; Weinberger, 1990; Weinberger et al., 1979), and tend to avoid perceiving (e.g., Eberhage, Polek, & Hynan, 1985), thinking about (e.g., Hare, 1966), and recalling (e.g., Davis, 1987; Newman & Hedberg, 1999) threatening stimuli.

Contrary to psychoanalytic assumptions, most studies have found that repressors, as opposed to nonrepressors, are better adjusted in a variety of psychosocial aspects, such as frustration tolerance, social skills, social competency, educational performance, peer popularity, and both self- and spousal satisfaction of marriage (e.g., Bonanno, Noll, Putnam, O'Neill, & Trickett, 2003; Bybee, Kramer, & Zigler, 1997; DeMan, 1990; Furnham & Traynar, 1999; Ginzburg, Solomon, & Bleich, 2002; Rofé, 1985). Additionally, a repressive coping style is inversely related to the prevalence of psychiatric disorders, as assessed by both self- and relatives' reports (Lane, Merikangas, Schwartz, Huang, & Prusoff, 1990). Some studies, however, have found that repressors are less-adjusted individuals, displaying difficulties in self-assertion, empathy, and inaccurate perception of their own and others' behaviors (e.g., see Weinberger's review, 1990). Furthermore, many studies show that a repressive coping style is physiologically costly, as it intensifies physiological reactivity, increases susceptibility to illness, and exacerbates a variety of health problems (e.g., Eagle, 2000b; Petrie, Booth, & Pennebaker, 1998; Schwartz, 1990; Weinberger, 1990, 1998; Weinberger et al., 1979). Similarly, although Vaillant (1990) reported no significant relationship between repression and psychopathology or physical health (see also Vaillant, 1976), he noted that repressive-defensive coping styles, comprised of dissociation and reaction formation, were correlated with poor physical health. Thus, it appears that while repressive coping styles have negative impacts on the individual's physiological health, most studies indicate that they tend to enhance the individual's psychological adjustment.

Research examining the effects of a positive illusion on mental and physical health has produced conflicting theoretical positions (e.g., see Block & Colvin, 1994; Colvin & Block, 1994; Shedler, Mayman, & Manis, 1994; Taylor & Brown, 1988, 1994a, 1994b). Although some studies show that an illusionary perception of the self may have damaging physiological consequences and is often associated with narcissism and poor levels of psychological adjustment (e.g., Colvin & Block, 1994; Shedler, Karliner, & Katz, 2003; Shedler, Mayman, & Manis, 1993), other investigators were unable to replicate these findings (Taylor, Lerner, Sherman, Sage, & McDowell, 2003) and reported that a positive illusion increases the prospect of mental and physical health (e.g., Gana, Alaphilippe, & Bailly, 2004; Taylor & Brown, 1988; Taylor, Kemeny, Reed, Bower, & Gruenwald, 2000; Taylor et al., 2003). It is also important to mention that some evidence indicates a curvilinear relationship between positive illusions and adjustment (e.g., Brendgen, Vitaro, Turgeon, Poulin, & Wanner, 2004). Hence, although psychoanalysis promoted the idea that as a rule, distortion of reality is undesirable, studies question the validity of this claim.

It may be argued that the aforementioned findings may not be suitable for examining Freudian repression, since, as noted by Eagle (2000b), "if one defines repression as the unconscious banishment of instinctual wishes from conscious awareness, then one could argue that the work on 'repressive style' bears only an indirect. . .connection to the Freudian concept of repression" (p. 166). Nevertheless, Eagle concludes that these findings bear "a very mean-

ingful 'family resemblance' to the psychoanalytic concept of repression, as is duly noted by many investigators" (p. 168; see also Westen, 1998a). Moreover, as stated, repression is pathogenic because it causes reality distortion, thus preventing effective problem solving (e.g., Dollard & Miller, 1950; S. Freud, 1915a, 1926, 1936). Accordingly, even if such studies are irrelevant for evaluating the mechanism of repression, they enable us to examine the validity of this notion by assessing the effect of reality distortion on the individual's adjustment. In this regard, the findings provide no conclusive answer. On the one hand, most studies refute the psychoanalytic assumptions, as they show that reality distortion tends to enhance the individual's psychosocial functioning. On the other hand, some studies suggest that such a coping style may be costly, as it increases the risk of physiological illness.

Inhibition of Tension

Psychoanalysis assumes that the restraint of negative emotions and impulses, especially anger and aggression, may produce harmful tension that not only facilitates subsequent hostile behaviors, but also increases the risk of various mental and physiological illnesses (e.g., see Alexander, 1950; Eagle, 2000a; Fenichel, 1946). However, contrary to the psychoanalytic notion of catharsis, research shows that expressing anger actually increases the potential for subsequent episodes of aggressiveness (Bushman, 2002; Bushman, Baumeister, & Stack, 1999). It is also doubtful whether inhibition of emotion facilitates the development of physiological illnesses. For example, although some studies support the psychoanalytic hypothesis that repression or suppression of anger may increase the risk of essential hypertension (e.g., Cochrane, 1971; Sommers-Flanagan & Greenberg, 1989), others found no significant relationship between these variables (e.g., Bunting, McClean, & Coates, 2000; Hogan & Linden 2004). Moreover, some studies demonstrated the opposite relationship, reporting that expressed anger increases the risk of hypertension (e.g., Bongard & al'Absi, 2003; Mann, 1977). Similar inconsistencies were found with regard to the effect of repression/suppression or expression of anger on the development of coronary heart disease. Although some studies found that suppression of anger increases the risk of coronary heart disease (e.g., Wielgosz & Nolan, 2000), others arrived at the opposite conclusion (e.g., Sirois & Burg, 2003). Conflicting findings were also found for cancer, where suppression of anger was found either to increase the risk of cancer (e.g., Harburg, Julius, Kaciroti, Gleiberman, & Schork, 2003) or to have no significant effect on it (e.g., Bleiker & Van der Ploeg, 1999).

An additional area of research relating to discharge of tension demonstrated that verbal or written emotional disclosure of stressful, disturbing, and traumatic events has significant positive impacts on the individual's physical health (e.g., Lepore & Smyth, 2002; Pennebaker, 1997). These findings were interpreted as consistent with the concept of repression (e.g., see Eagle, 2000b; Lepore & Smyth, 2002). However, meta-analyses conducted by Frisina and his colleagues showed a small effect size of expressive writing on physical health but not on psychological health (see Frisina, Borod, & Lepore, 2004; Frisina, Lepore, & Borod, 2005). Moreover, it is doubtful whether these findings can support repression, both because subjects in these studies were aware of their trauma and the underlying mechanism of this phenomenon is not yet known (see review by Sloan & Marx, 2004). As noted by Pennebaker (2004) regarding emotional disclosure, "No single theory or theoretical perspective has convincingly explained its effectiveness" (p. 138).

Conclusion

Contrary to psychoanalysis, most studies indicate that reality distortion tends to enhance the individual's psychosocial functioning. Similarly, recent findings refute the psychoanalytic notion of catharsis, as expression of anger tends to increase hostile-prone behaviors. On the other hand, with the exception of anger, findings tend to support psychoanalysis, as they show that a repressive style and inhibition of emotions may have deleterious effects on one's physical health. Repression, however, was originally developed to account for the development of mental disorders, and not of physical illnesses. Thus, because repression exerts pathogenic effects mainly with regard to physical health, whereas it usually has positive effects on psychological functioning—which constitutes

the main theoretical target of psychoanalysis—findings may be seen as an additional challenge to the Freudian concept of repression.

The Unconscious

Although some investigators claim that Freud himself originally viewed repression as a deliberate cognitive process (e.g., Bowers & Farvolden, 1996; Erdelyi, 2001, 2006), the traditional claim that repression is an unconscious mechanism, according to both Freud (e.g., see Kihlstrom, 2006; Langnickel & Markowitsch, 2006) and his followers (e.g., Alexander, 1950; Fenichel, 1946; A. Freud, 1936), continues to dominate mainstream psychoanalysis (e.g., Cramer, 2001; Wilson & Dunn, 2004). Moreover, as previously stated, even if repression is a conscious and deliberate process, it is indisputable that Freud viewed the unconscious as an integral part of repression (e.g., Fayek, 2005; S. Freud, 1915a). This means that regardless of whether the initial act of repression is conscious or unconscious, this concept becomes meaningless in its Freudian sense if no proof is found for the unconscious.

The unconscious, as portrayed in psychoanalytic literature, has unique sensitivity to anxiety-provoking stimuli and the ability to remove such stimuli from conscious awareness (e.g., Fenichel, 1946; S. Freud, 1915b). Additionally, the unconscious is seen as a powerful entity, superior or equal to the conscious, which has the capability to control and manipulate the individual's behavior and produce a wide range of neurotic disorders (e.g., see Fenichel, 1946; S. Freud, 1915b, 1923; O'Brien & Jureidini, 2002). As noted by Gross (1978), "in every one of our miniscule actions, we are told, we are the puppets of a controlling unconscious with its own eccentric will" (p. 173). Similarly, Bonanno and Keuler (1998), emphasizing the strong connection between Freudian repression and the unconscious, noted that "the unconscious must have an autonomous quality—an inner 'homunculus' which must somehow possess the omnipotence or wisdom to 'know' what is best for the conscious self" (p. 439).

Thus, in order to verify the Freudian unconscious, advocates must prove the existence of a dynamic unconscious that has unique sensitivity to anxiety-provoking stimuli. Most importantly, it is necessary to demonstrate that such a mechanism is endowed with powerful and sophisticated abilities to control and manipulate the individual's behavior, such as the production of a large variety of neurotic symptoms and the ability to prevent the conscious effort of resuming normal behavioral functioning. Studies relevant to these two aspects of the Freudian unconscious are reviewed below.

Repression Proper

This concept refers to the automatic transfer of material into the unconscious after it has been consciously recognized by the individual (e.g., see MacKinnon & Dukes, 1964). Earlier experiments on repression proper by Zeller (1950a, 1950b, 1951) and others (see Holmes's review, 1974) were shown to be consistent with Freud's theory. Subjects displayed poor recall of verbal material that was experimentally followed by ego threat. Moreover, removal of the threat improved memory. More controlled studies, however, showed that these earlier findings had been misinterpreted, and can more adequately be accounted for by the concept of conscious distraction (e.g., D'Zurilla, 1965; Holmes & Schallow, 1969). One illustration of this claim is Holmes's (1972) study, demonstrating that not only ego-threatening, but also ego-enhancing manipulations resulted in poorer recall of words learned prior to the manipulation, and that both groups showed a significant improvement in recall following the debriefing. Consequently, Holmes (1974) concluded that "there is no evidence that repression does exist. . .Attentional processes. . .which are independent of the unconscious and of 'defensive functions' repeatedly provided the best explanation for the laboratory findings. . ." (p. 650).

Distraction may also account for experimental findings on posthypnotic amnesia, which has been employed to support the concept of repression proper (e.g., Brown et al., 1999). Although some investigators attributed this phenomenon to automatic unconscious repression (e.g., Clemes, 1964; Cooper, 1972), others reported that post-hypnotic amnesia could be better explained as a result of conscious distraction (e.g., Spanos, 1986; Wagstaff & Frost, 1996). Hence, experimental studies on repression proper question the existence of repression as an unconscious psychological process.

Primal Repression

Primal repression involves "the psychical (ideational) representative of the instinct being denied entrance into the conscious" (S. Freud, 1915a, p. 148). In support of this concept, studies on perceptual defense have shown that some individuals became emotionally aroused by certain threatening stimuli, usually related to sexual and hostile drives, even though they were unable to consciously identify these stimuli (see MacKinnon & Dukes, 1964). Others, however, rejected this interpretation on methodological grounds (e.g., see Eriksen & Pierce, 1968; Holmes, 1974, 1990). Nevertheless, even if the perception of threatening stimuli in the absence of awareness is a real phenomenon, as claimed by some investigators (e.g., Dixon, 1981), this can be accounted for by concepts other than unconscious perception. Based on selective attention studies, Erdelyi (1974; see also Nisbett & Wilson, 1977) suggested that when a subject is confronted with threatening stimuli at the threshold level, avoidance measures (e.g., closing eyelids or fixating away and thereby contracting the diameter of pupils) are *intentionally* employed to terminate its perceptual processing beyond the iconic stage of memory. Accordingly, the perceiver is aware of the troublesome material for a fraction of a second before it becomes permanently lost from memory. Erdelyi's theoretical suggestion was also applied by Rofé (1989) to account for the Gur and Sackeim (1979) findings that subjects with a negative self-image failed to identify their recorded voices, while simultaneously displaying physiological arousal.

An alternative explanation of the Gur and Sackeim (1979) findings, which can be applied to the entire field of perceptual defense phenomena, was suggested by Greenwald (1988, 1997). Although Greenwald acknowledged the existence of an unconscious, he suggested that it merely has crude analytic capabilities that allow subjects to quickly identify certain prominent components of stimuli, such as the acoustic features of the voices in the Gur and Sackeim experiment. Although these basic features are sufficient to cause emotional arousal, they also enable the individual to prevent continued arousal by disrupting further processing of stimuli. This theoretical account is equally incompatible with psychoanalysis, because, contrary to the sophisticated nature of the unconscious, which is capable of fully identifying threatening stimuli, Greenwald's unconscious has poor analytic abilities that allow only a partial identification of threat (see also Greenwald, 1992).

Additional evidence demonstrating unconscious sensitivity of threat, which psychoanalytic advocates used to support the unconscious (e.g., Westen, 1998a, 1999), is the subliminal perception of specific phobic stimuli (e.g., Merckelbach, de Jong, Leeuw, & Van den Hout, 1995; Soares & Öhman, 1993). Not only could these results not be replicated (e.g., Mayer, Merckelbach, de Jong, & Leeuw, 1999; Mayer, Merckelbach, & Muris, 1999), but the Öhman and Soares (1994) explanation of this phenomenon is in line with LeDoux's (1994) psychophysiological theory that fear is elicited by a direct neural pathway that bypasses the cortex. Accordingly, Öhman and Soares concluded that their data are more consistent with Greenwald's theoretical approach than with the psychoanalytic conception of the unconscious.

In conclusion, although there seems to be strong evidence for unconscious sensitivity to threatening stimuli, these findings do not necessarily support the psychoanalytic theory. Alternative theories, which do not assume the existence of sophisticated unconscious processes, are also capable of addressing these findings.

Subliminal Psychodynamic Activation

A number of studies have shown that subliminal psychodynamic activation (SPA, Silverman, 1967, 1976), whereby subjects are subliminally exposed to messages containing psychodynamic meaning (e.g., "Mommy and I are one"), affected behavior in both clinical and nonclinical populations (e.g., see Balay & Shevrin, 1988; Hardaway, 1990; Siegel & Weinberger, 1998). As noted by Wachtel (1984), any effort to assess the validity of the unconscious "is incomplete without coming to terms with this remarkable body of work" (p. xi). SPA studies, however, were shown to suffer from methodological difficulties (e.g., see Balay & Shevrin, 1988; Fudin, 2001, 2002), and numerous attempts to replicate these findings have been unsuccessful (e.g., Condon & Allen, 1980; Hapsel & Harris, 1982; Porterfield & Golding, 1985). Although meta-analyses show "that some SPA effects are genuine and that the SPA

method is a valid means for testing psychoanalytic dynamic propositions" (Weinberger & Hardaway, 1990, p. 751; see also Hardaway, 1990), according to Fudin and Benjamin (1992), many SPA studies with negative findings were not considered, and the ratio between supportive and nonsupportive studies is 1:1, and not 4:1 as had been reported (see Hardaway, 1990). Furthermore, Fudin (2001) questions the psychodynamic interpretation of these findings, noting that "after more than 35 years of research, the clear evidence for that interpretation is nil" (p. 619; see also Fudin, 2002). This view is also shared by Kihlstrom (2004), who, while believing that subliminal perception confirms the existence of unconscious perception, concluded that "contemporary research on subliminal perception provides no reason to think he [Freud] was right" (p. 97).

Cognitive Research

Psychoanalytic advocates have also used research from cognitive psychology, such as selective attention, subliminal perception, and unconscious processes in the visual system to support Freudian unconscious (Shevrin & Dickman, 1980). As noted by Kihlstrom (1984), however, Shevrin and Dickman "have attempted to reconcile the conception of the unconscious offered by contemporary cognitive psychology with that held by Freudian psychoanalysis. . . The attempt ultimately fails, however, because the nature of this unconscious content, and the principles of its operation, is so radically divergent from the proposal of psychoanalysis" (p. 156). Moreover, although these findings support the existence of unconscious perception, such processes are severely limited in their analytic abilities (e.g., Bruner, 1992; Greenwald, 1992; Loftus & Klinger, 1992). Accordingly, Greenwald (1992) concluded that if evidence for a sophisticated unconscious is not found, "it will be time, at last, to abandon psychoanalytic theory's proposal that unconscious cognition is the analytic peer (or superior) of the conscious cognition" (p. 775; see also Kihlstrom, Barnhardt, & Tataryn, 1992).

Nevertheless, investigators still continue to use findings from cognitive psychology to support the existence of the Freudian unconscious (e.g., see Ekstrom, 2004; Epstein, 1994; Erdelyi, 2004; Westen, 1998a, 1998b, 1999). For example, Westen (1998a, 1998b, 1999) reviewed findings from several areas of research, such as: (a) automatic performance of motor skills (e.g., tying a shoe and driving a car); (b) masked priming (e.g., subliminal presentation of neutral primed stimuli, such as "dog," facilitates the perception of target stimuli presented subsequently, such as "terrier"); (c) the ability to learn new information despite the inability to display this information consciously because of neurological damage to the hippocampus; and (d) conditioning, whereby subjects unconsciously learn to associate pleasant or unpleasant feelings with certain stimuli.

Given the complex nature of some of the aforementioned behaviors, it may be argued that such evidence proves the sophisticated nature of the unconscious (e.g., Bargh, 2005; Bargh & Ferguson, 2000; Epstein, 1994; Westen, 1999). The Freudian unconscious, however, is characterized by a variety of defense mechanisms and has exceptional creative abilities in producing a large number of behavioral disorders. Moreover, in many cases, these deviations consist of complex and well-organized behaviors, such as those found in dissociative identity disorder (DID), whereby the unconscious is supposedly capable of controlling and manipulating over 100 personalities (DSM-IV-TR, American Psychiatric Association, 2000; see also Kluft, 1988). The unconscious also has the ability to produce symptoms that are symbolic representations of unconscious conflicts (e.g., Little Hans; S. Freud, 1909). None of the aforementioned cognitive studies bear even a remote resemblance to the sophisticated and powerful Freudian unconscious. As noted by Mayer and Merckelbach (1999), it is difficult to imagine how complex behaviors without awareness, found in cognitive studies, "could account for the etiology of psychopathological symptoms" (p. 575). Similarly, O'Brien and Jureidini (2002) noted in their review article that the cognitive unconscious is very different from the dynamic unconscious, because "rather than being a powerful unitary system, it is fragmented across a large number of informationally encapsulated and narrowly focused specialist computational mechanisms; it is not populated with person-level mental entities such as beliefs, desires and memories. . ." (p. 146). Accordingly, they conclude that "far from supporting the dynamic unconscious, recent work in cognitive

science suggests that the time has come to dispense with this [Freudian] concept altogether" (p. 141). Strong opposition to using studies from cognitive psychology to support the Freudian unconscious has been expressed by many other investigators (e.g., Greenwald, 1992; Grünbaum, 2002; Kihlstrom, 1999, 2000, 2004), as well.

Neurological Research

A number of investigators attempted to find a neurological basis for the unconscious. For example, based on the incapability of split-brain individuals to verbalize information stored in the right hemisphere, and on evidence that conversion symptoms occur more frequently on the left side of the body, Galin, Diamond, and Braff (1977; see also Galin, 1974) speculated that the unconscious is located in the right hemisphere. However, this idea lacks scientific support, as there is clear evidence for consciousness in both hemispheres (e.g., Corballis, 1980, 1999; Morin, 2001). As noted by Baars (2005), "entire hemispheres are routinely removed surgically without loss of consciousness [awareness]" (p. 15).

Shevrin, Ghannam, and Libet (2002) used six patients who had undergone neurosurgical procedures for dyskinesia, during which the length of time needed for conscious awareness of a given stimuli was measured, in an attempt to find a neurological basis for repression. Employing a battery of psychological tests that supposedly examine defensiveness, the authors found that delayed access to consciousness was related to repressiveness. However, among other limitations of this study (e.g., a small number of subjects suffering from physical disorders), the authors themselves acknowledge that it is unlikely that repression itself was involved in the delayed consciousness.

Another attempt to connect repression with neurological factors was made by Anderson et al. (2004). With the use of functional magnetic resonance imaging (fMRI), the authors found that impaired retention caused by deliberate forgetting attempts was associated with increased dorsolateral prefrontal activation and reduced hippocampal activation. However, as already noted with regard to the Anderson and Green (2001) study, which used deliberate forgetting to investigate repression, this study also examined "voluntary suppression, not unconscious repression" (Kihlstrom, 2002, p. 502). Additionally, the stimuli consisted of neutral words with no psychodynamic meaning.

The search for neurological correlates to Freudian concepts has been a rapidly growing line of research, particularly with regard to the unconscious (see Mancia, 2006; Westen, 1998a, 1998b, 1999). However, none of these studies necessitate the Freudian unconscious assumption. For example, some investigators used neurological structures associated with implicit memory, such as memory observed in patients suffering from brain damage who have no conscious recollection of their learning experiences, as support for the unconscious (e.g., Mancia, 2006; Westen, 1998b). Kihlstrom (1999), however, noted in reference to such evidence that these findings "cannot be offered in support of a theory that attributes conscious behavior to repressed sexual and aggressive urges. . .to say that this body of research supports psychoanalytic theory is to make what the philosopher Gilbert Ryle called a category mistake" (p. 377).

Conclusion

There seems to be little doubt regarding the existence of unconscious sensitivity to threat. Evidence also tends to support the existence of unconscious processes controlling simple and complex behaviors. However, as noted by Kihlstrom (1999), "modern laboratory research provides no support for the psychoanalytic view of unconscious mental life" (p. 377). Investigators have not yet presented clear empirical evidence in support of a dynamic and sophisticated unconscious entity which can account for the development and maintenance of psychopathological disorders, as suggested in the psychoanalytic theory. Consequently, because repression necessitates the existence of such dynamic unconscious processes, the continuous lack of support for this fundamental psychoanalytic assumption undermines the validity of repression as well.

Development of Neurosis

Although postclassical psychoanalysts undermine the importance of repression, emphasizing other components in the etiology of pathologi-

cal behaviors (e.g., Fonagy & Target, 2003; Mitchell & Black, 1995), according to classic psychoanalysis, repression is the underlying cause of neuroses (e.g., Eagle, 2000a, 2000b; Fenichel, 1946; Fonagy & Target, 2003; S. Freud, 1915a). Thus, taking into account that repression emerged out of clinical work with neurotic patients, and that this concept was aimed at accounting for the development of neuroses, it can be argued that the above review does not truly challenge repression, because it focuses mainly on nonclinical populations. Here too, as in the previous section, findings in this area also tend to be inconsistent with psychoanalysis.

For example, the high rate of child abuse among DID patients is often mentioned in support of the psychoanalytic theory that repression of such traumatic events causes the development of DID (e.g., see Kluft, 1998; Martinez-Taboas, 1996). However, given the psychoanalytic assumption that the nature of repressed traumas determines the specific type of neurosis (e.g., Fenichel, 1946; S. Freud, 1914, 1915a, 1915b), it is difficult to understand why child abuse is also associated with other psychiatric disturbances such as anxiety and depression (e.g., Bushnell, Wells, & Oakley-Browne, 1992; Yama, Tovey, & Fogas, 1993), panic disorder (e.g., Friedman et al., 2002), eating disorders (e.g., Bushnell et al., 1992; Romans, Gendall, Martin, & Mullen, 2001), suicide (e.g., Meadows & Kaslow, 2002; Read, Agar, Barker-Collo, Davies, & Moskowitz, 2001), injurious behavior (e.g., Favaro & Santonastaso, 2000), and schizophrenia (e.g., Walsh, Macmillan, & Jamieson, 2002). Moreover, "most people who suffer even severe child abuse do not exhibit [DID], and many people who have not been abused can easily and quickly be induced to display multiplicity" (Spanos, 1994, p. 158). An additional challenge to the psychoanalysis is the sociocognitive model. This theory views DID as a role enactment and claims that the sexual abuse reported by DID patients is often fabricated with the therapist's encouragement (e.g., Acocella, 1999; Read & Lindsay, 1994; Spanos, 1994, 1996). Although psychoanalytic advocates criticize this theoretical position (e.g., Gleaves, 1996), both a reevaluation of this critique (e.g., Lilienfeld et al., 1999) and experimental evidence (e.g., Stafford & Lynn, 2002) indicate that sociocognitive models pose an additional challenge for the psychodynamic account of this disorder.

Like DID, some psychoanalytic investigators attributed agoraphobia and panic disorder to early repressed anxieties relating to separation experiences (e.g., DelMonte, 1996; Frances & Dunn, 1975; Rhead, 1969; Vandereycken, 1983). Accordingly, some investigators found a significant relationship between separation anxiety and agoraphobia or panic disorder (e.g., Bandelow et al., 2002; Laraia, Stuart, Frye, Lydiard, & Ballenger, 1994; Silove et al., 1995). However, others could not replicate the relationship between separation anxiety and agoraphobia with panic disorder, and some claim that this hypothesis should be abandoned (e.g., Thyer, Himle, & Fischer, 1988; Thyer, Nesse, Cameron, & Curtis, 1985; Thyer, Nesse, Curtis, & Cameron, 1986). Even if separation anxiety is truly linked to agoraphobia and panic disorder, this does not necessarily reflect repression, because separation anxiety was measured by self-report scales indicating that subjects were aware of their separation experiences (e.g., see Bandelow et al., 2001; Zitrin & Ross, 1988).

Psychoanalysis also related obsessive-compulsive disorder (OCD) and obsessive personality to anal-sadistic conflicts where repressed anger is a major feature (Fenichel, 1946; S. Freud, 1908, 1913). However, an empirical evaluation of this suggestion found no supportive evidence (e.g., see Emmelkamp, 1982; Judd, 1997; Pollak, 1979). As noted by Pollak (1979), "there appears to be little evidence in favor of classical psychoanalytic theories about the psychogenesis of obsessive-compulsive personality" (p. 238).

Therapy

Another measure for evaluating the existence of repression is the examination of the Breuer and Freud's (1895) claim that lifting repression is crucial for therapeutic success. This idea is a central component of classic psychoanalysis (e.g., see Bergmann, 1992; Blum, 2003; Fenichel, 1946, Grünbaum, 2002; Kluft, 1995), and as noted by Eagle (2000b), "the therapeutic value of lifting of repressions remains as one of the core theoretical assumptions underlying psychoanalytic, as well as other, related treatments" (p. 168).

However, studies cast doubt on the efficacy of psychoanalysis; most importantly there is no evidence that the therapeutic efficacy results from lifting of repression. Regarding the efficacy of psychoanalysis, studies yield inconsistent results. On the one hand, a number of investigators arrived at the conclusion that psychoanalysis is an ineffective therapeutic intervention (e.g., Erwin, 1980; Eysenck, 1952, 1966, 1994; Fonagy et al., 2002). Additionally, in mapping out the efficacy of empirically supported psychological treatments for specific psychiatric disorders, Chambless and Ollendick (2001; see also Task Force, 1995) did not even include psychoanalysis in their assessment, apparently because it did not meet the criteria by which empirically supported therapies were defined. On the other hand, Grant and Sandell (2004, see also Leuzinger-Bohleber, Stuhr, Ruger, & Beutel, 2003), assessing the efficacy of psychoanalysis with a large Swedish sample, found that during a follow-up period, patients displayed a significant improvement, almost to the point where they were indistinguishable from a nonclinical sample. Likewise, in a review article on the efficacy of psychodynamic therapy, Leichsenring (2005) concluded that psychoanalysis "yielded effect sizes that significantly exceeded the effects of untreated or low-dose treated comparison groups" (p. 854). Although some evidence supports the efficacy of psychoanalysis, there seems to be no empirical evidence that this positive effect is the consequence of lifting of repression. This position has been explicitly acknowledged by neo-Freudian psychoanalysts, at least with regard to the recovering of repressed memories. For example, Fonagy (1999) claims that "some still appear to believe that the recovery of memory is part of the therapeutic action of the treatment. There is no evidence for this and in my view to cling to this idea is damaging to the field" (p. 215). Although it is true that short-term psychodynamic therapy yields more consistent results (see review by Fonagy, Roth, & Higgit, 2005), here too there is no evidence that this efficacy stems from lifting of repression. Moreover, it is doubtful whether short-term psychodynamic therapy bears any relevance to classic psychoanalysis. As noted by Fonagy and his colleagues (2005), "most analysts would consider that the aims and methods of short-term, once-a-week psychotherapy are not comparable to 'full analysis'" (p. 41).

Thus, as stated, the concept of repression emerged primarily out of Freud's therapeutic work. However, irrespective of psychoanalysis's efficacy, there is no empirical confirmation that shows that therapeutic success or failure is associated with "lifting of repression.

Discussion

Psychoanalysis postulated five cardinal assumptions, which must be validated in order to prove the existence of repression. These assumptions consist of the three major components of repression and the application of this concept to the development and treatment of neuroses. As shown, no decisive evidence was found for any of these postulations, and in fact, findings tend to contradict psychoanalysis. The principle findings concerning these assumptions are summarized below.

Memory. Although some investigators claimed that memory of trauma may not be relevant for evaluating Freud's theory, as he altered his concept of repression (e.g., see Boag, 2006a), in the recent years repression became almost synonymous with memory of trauma (e.g., Brown et al., 1999; McNally, 2003; Piper et al., 2000). In this regard, contrary to the psychoanalytic prediction, people have the tendency to remember their traumatic experiences. Although some people display amnesia of such events, this can be attributed to deliberate forgetting processes, which received significant empirical support. These findings showing that people tend to remember trauma are consistent with recent evidence indicating that amnesia of trauma "is not an innate, naturally occurring phenomenon but rather a product of modern Western culture" (Pope, Poliakoff, Parker, Boynes, & Hudson, 2007a, p. 231; see also Altschuler, Ramachandran, & Ravi, 2007; H. G. Pope, Poliakoff, Parker, Boynes, & Hudson, 2007b).

Pathogenic effects. In contrast to psychoanalysis, most studies show that distortions of reality, and in many cases inhibition of impulse or emotion, have beneficial effects. Although it is true that repressive behaviors may endanger the individual's physical health, this may be less relevant for assessing Freud's theory, because the maladaptive effects of repression focused

mainly on psychological well-being rather than physiological health.

The unconscious. Although repression can be defined without referring to the unconscious (e.g., Boag, 2006a; Erdelyi, 2006; Erdelyi & Goldberg, 1979), it becomes useless in its psychoanalytic sense without assuming the existence of a sophisticated and omnipotent cognitive mechanism, equal or superior to the conscious. However, although studies prove the existence of primitive and simple unconscious processes, a century of intensive research yielded meager supportive evidence for such a powerful system.

Development of neurosis. The concept of repression was originally suggested primarily to account for the development of neurotic disorders. Thus, even if all three components of repression had been proven, such findings would not be sufficient for verifying this psychoanalytic idea. As noted by Grünbaum (1986), "The mere existence of repression as a psychological phenomenon. . .is not sufficient to demonstrate that it causes neurotic symptoms" (p. 225). Here too, however, studies provide no empirical support for this idea. Moreover, some findings, such as the sociocultural account of DID, are incompatible with the idea that this disorder is the consequence of repressed traumas.

Therapy. Repression emerged out of the Breuer and Freud's (1895) therapeutic work with neurotic patients, whereby the lifting of repression was found to be crucial for therapeutic success. This idea remained one of the core theoretical assumptions of classic psychoanalysis (e.g., Eagle, 2000b). However, not only does the efficacy of psychoanalytic therapy remain controversial, but there is no empirical evidence that the therapeutic success of either psychoanalysis or other methods result from lifting of repression.

Thus, the overall findings from all five domains seriously challenge the classical psychoanalytic notion of repression. Recently, Erdelyi (2006) suggested that Freud himself viewed repression as a conscious and deliberate withdrawal of attention, and claimed that it can be conceptualized as deliberate forgetting. However, not only did Erdelyi encounter strong opposition regarding his narrow conception of repression (e.g., Bonanno, 2006; Crews, 2006; Kihlstrom, 2006; McNally, 2006), he also failed to address studies pertaining to the remaining four aspects of repression, which, according to psychoanalysis, are strongly linked to this concept. Thus, in the absence of studies that validate the existence of the unconscious and pathogenic effects, Erdelyian repression has little value in accounting for the development and treatment of neuroses, the main theoretical targets of psychoanalysis.

One practical implication of this review article is the importance of repression in legal settings. Much of the controversy surrounding repression focuses on sexual abuse charges in the courtroom, based on recovered memories that may or may not be authentic (e.g., Brown, 2001; Dallam, 2001; Piper et al., 2000; Underwager & Wakefield, 1998; Wagenaar, 1997; Whitfield, 2001). Given the numerous studies that consistently disprove the memory component of repression, it may be unjust to legally convict an alleged perpetrator relying on recovered memories, without external confirmation of the authenticity of those memories. As noted by Underwager and Wakefield (1998), "faced with both the lack of support and the lack of testability for repression, the court should rule that testimony based on the concept is not scientific and cannot be relevant of helpful to the finder of fact. Therefore, it is not admissible." (p. 412).

In light of the difficulties that the Freudian repression has encountered, some investigators suggested the notion of dissociation as an alternative concept (e.g., see Bonanno & Keuler, 1998; Underwager & Wakefield, 1998). Dissociation is used to account for cases where patients failed to remember or had partial recollection of trauma, as well as for deviant behaviors such as depersonalization, amnesia, and identity confusion (e.g., see Bonanno & Keuler, 1998; Lynn et al., 2004). However, as noted by Bowers and Farvolden (1996), "repression and dissociation are sometimes used interchangeably, and even when this is not the case, the differences between them are often unclear" (p. 358; see also Eagle, 2000a; Eisen & Lynn, 2001). Furthermore, the mechanism by which dissociation (i.e., unawareness) occurs remains in dispute. Although some investigators attribute this effect to cognitive or neurological mechanisms (e.g., Bob, 2003; Bonanno & Keuler, 1998), others use this concept in connection with unconscious processes (e.g.,

Gullestad, 2005). Another problem concerns the fact that trauma is associated with a wide range of neuroses, such as DID (e.g., see Kluft, 1998; McNally et al., 2003), eating disorders (e.g., Romans et al., 2001), and panic disorder (e.g., Friedman et al., 2002), and it may sometimes have no significant pathogenic effect (e.g., Rind, Tromovitch, & Bauserman, 1998). It is difficult to understand how the simple notion of dissociation can account for such a diversity of outcomes (see also Underwager & Wakefield, 1998). Moreover, as noted by Lynn and his colleagues (2004), "a review of the research literature finds little empirical support for a dissociative mechanism that is responsible for the forgetting of traumatic events" (p. 178).

The psychoanalytic multidimensional concept of repression derived its main source of support from numerous case studies of bizarre behavioral deviations, whereby patients could neither account for the radical changes in their behavior nor resume normal behavioral functioning (e.g., Erdelyi, 1985; Fenichel, 1946; S. Freud, 1914). Although the abandonment of repression seems inevitable in light of the comprehensive empirical evaluation presented in this article, the question arises as to whether rival theories of psychopathology, such as behavioral, cognitive, or biological models, can replace psychoanalysis in addressing these clinical observations. To the extent that these theories also suffer from fundamental empirical difficulties, we may need a new theory of psychopathology—perhaps a new concept of repression—that can provide a new insight into the underlying causes of psychiatric disorders. Nevertheless, the fact remains that the Freudian notion of repression cannot be used as a scientific psychological concept, as its empirical status precludes this possibility.

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