

Understanding Defense Mechanisms

Phebe Cramer

Abstract: Understanding defense mechanisms is an important part of psychotherapy. In this article, we trace the history of the concept of defense, from its origin with Freud to current views. The issue of defense as an unconscious mechanism is examined. The question of whether defenses are pathological, as well as their relation to pathology, is discussed. The effect of psychotherapy on the use of defenses, and their relation to a therapeutic alliance is explored. A series of empirical research studies that demonstrate the functioning of defense mechanisms and that support the theory is presented. Research also shows that as part of normal development, different defenses emerge at different developmental periods, and that gender differences in defense use occur.

Keywords: defense mechanisms, pathology, therapy, empirical research, age and gender differences

WHAT YOU DON'T KNOW CAN HURT YOU

The old adage that what you don't know can't hurt you turns out to be flawed. Not recognizing reality can result in self-injurious behavior, as seen in the two examples that follow. One example comes from a recent therapy case, although the phenomenon has been known for some time. The other comes from a classic case described by Sigmund Freud (1896).

The first example of the negative effect of denial comes from an intelligent woman who came to therapy as a result of interpersonal problems that affected her professional career. She had grown up in a Jewish family in Brooklyn, but was now living in New England. As a child, she had suffered from an extreme sense of aloneness. The family did not invite others—adults or children—into their apartment. At that time, she had understood the absence of friends and relatives from her life

Phebe Cramer, Ph.D., Williams College.

as being the result of her parents wanting to associate only with Jews. She then explained to me that since there were no other Jews living in Brooklyn, there was no one with whom to associate. This myth was maintained despite the fact that she had told me about neighbors across the hall celebrating Passover and her Jewish cousins living nearby. Although the use of denial allowed her to maintain a sense of uniqueness, it also resulted in her suffering from loneliness and a sense of alienation, all of which continued into adulthood and interfered with her current functioning.

A second example comes from the early writings of Freud (1896). Previously (1894), Freud had recognized that the symptoms of both hysteria and obsessive-compulsive neuroses served to defend the patient against memories of traumatic events in childhood. Two years later, he applied the idea of defense to understanding a case of paranoia. A young married woman had developed symptoms of being distrustful, thinking that she was being watched, that others had something against her, and did things to upset her. Visual hallucinations of a sexual nature also occurred. In her treatment with Freud, these symptoms were traced to repressed memories from childhood that were associated with shame, self-reproach, and self-criticism. However, when these thoughts threatened to enter consciousness, a new mental operation—described as projection—was brought into play. Now, the self-reproach was avoided, and in its place there developed distrust directed against others, including the idea that they will criticize her.¹ Put differently, the thoughts associated with the trauma circumvented repression and were changed in such a way that they became accepted, in a different form; others were reproaching her. Although the use of this defense protected the patient from self-reproach, it significantly interfered with her functioning, as she became withdrawn and unwilling to go outside of her house, fearing the expected hurtful treatment by others.

These two examples demonstrate the functioning of two defense mechanisms—denial and projection. Further clinical study (e.g., Fenichel, 1945; A. Freud, 1936) identified additional mental operations that served defensive functions, including isolation, intellectualization, rationalization, displacement, reaction formation, and sublimation.

The following essay reviews the history and development of the idea of defense mechanism, and then raises some questions, or misconceptions, about defenses. This is followed by research evidence that demonstrates, experimentally, how defenses function. Further evidence is provided demonstrating that defenses may be associated with patholo-

1. According to translator James Strachey, this was the first use of the technical term of projection (footnote, p. 180).

gy, that their use may be modified by psychotherapy, and that defenses are associated with both gender and age.

HISTORY

The concept of the defense mechanism is at the core of psychoanalytic theory. Introduced by Freud in his early writing (1894) as a mental function, this characteristic of the mind made it possible for any type of mental material to “screen,” or conceal other material. The purpose of this defense activity in patients was to avoid experiencing painful feelings and affect.

Freud’s thinking about defenses was subsequently modified, with the focus shifting to the relation between defenses and instinctual drives. Defenses were now understood to act as a counterforce against the push of the drives for discharge. Once the structural model of personality (id, ego, superego) became part of psychoanalytic theory (S. Freud, 1923, 1926), the concept of the defense was again considered as a general mental function, and to be part of the ego. In addition, it was further suggested that there could be various defense mechanisms, the function of which was always to protect the ego against instinctual demands.

These two conceptions of the function of defenses—to avoid painful feelings and affects and to repel the instinctual drives—were subsequently reconciled by Anna Freud (1936), in the first systematic treatise on the development, function, and varieties of defense mechanisms. In this work, both functions of defenses were subsumed under the broader purpose of protecting the ego by “warding off” anxiety and guilt feelings. Although the motive for defense mechanisms continued to be tied to the need to hold off the push of instincts for discharge, further distinctions were made between the need to protect the ego from internal and from external sources of danger. Internal danger—“dread of the strength of the instincts” (A. Freud, 1936, p. 63)—was seen to result in defense against “instinctual anxiety” (p. 63). External danger to the ego was said to occur when children fear to disobey parents’ prohibitions, resulting in “objective anxiety” (p. 60) or, in adults, “superego anxiety,” in which the internalized conscience is the source of the prohibitions.

These three motives for defense use—instinctual anxiety, objective anxiety, and superego anxiety—were also considered by Fenichel (1945) in his extensive discussion of defense mechanisms. However, Fenichel’s explanation of objective anxiety and superego anxiety (or guilt) differed substantially from A. Freud. Rather than relating these to the threat of instinctual drives, Fenichel stressed that the threat is the

fear that narcissistic supplies and security will be lost. Prior to the development of the superego, the developing child experiences this loss of external supplies as anxiety. After the formation of the superego, the experience is of guilt, based on the internalized conscience that may withhold narcissistic supplies. In both cases, the function of the defense is to protect the ego from these feelings of anxiety or guilt, which may also include disgust and shame. If this protection does not occur, negative affect may become overwhelming, resulting in the loss of self-esteem, panic, and, in the extreme, feelings of annihilation. Fenichel's approach thus modified the theory that defenses were inextricably tied to the instinct theory. He provided a second, and different function of defenses—namely, the need to protect the self.

In current times, the Defensive Functioning Scale (DFS) was introduced into the *DSM-IV* (American Psychiatric Association, 1994). This scale consists of 31 defenses grouped hierarchically into seven levels, from adaptive to maladaptive. These levels, and definitions of each defense, are provided in *DSM-IV* (pp. 751–757). To this, Berney, de Roten, Beretta, Kramer, and Despland (2014) have added a level of “psychotic” defenses, including psychotic denial, autistic withdrawal, distortion, delusional projection, fragmentation, and concretization. Curiously, this defense axis was omitted from *DSM-V*.

An alternate grouping of defenses had been suggested by Vaillant (1992). In this analysis, 18 different defenses were arranged hierarchically into four levels: narcissistic (e.g., denial of external reality; distortion of external reality); immature (e.g., denial/dissociation, projection), neurotic (e.g., rationalization, reaction formation), and mature (e.g., altruism, sublimation). (See Table 1.) This hierarchical arrangement of defenses is supported by evidence showing that the higher level mature defenses are associated with adaptive functioning, whereas lower level defenses are more likely to occur in connection with psychological problems.

ARE DEFENSES PATHOLOGICAL?

Are defenses pathological or indications of pathology? This idea easily follows from the context in which the idea of defense was introduced—Freud's papers on the “neuro-psychoses” (S. Freud, 1894, 1896). Here, defense was considered a pathological phenomenon. This idea was furthered in later writings, and in the idea that neurotic symptoms were the expression of defense mechanisms. In this conception, the particular form of neurosis depended on the particular defense

Table 1. Vaillant's Levels of Defense**Psychotic defenses**

Denial (of external reality)
 Distortion (of external reality)

Immature defenses

Passive aggression
 Acting out
 Dissociation
 Projection
 Autistic fantasy: Devaluation, Idealization, Splitting

Neurotic (intermediate) defenses

Intellectualization
 Isolation
 Repression
 Reaction formation
 Displacement
 Somatization
 Undoing
 Rationalization

Mature defenses^a

Suppression
 Altruism
 Humor
 Sublimation

Note. ^aNot included in Vaillant's list is Identification, which may be considered a Mature defense, at least in adolescence.

mechanism(s) being used (Fenichel, 1945; A. Freud, 1936; Wallerstein, 1967).

Several criteria have been suggested to determine if a defense should be considered pathological, or not. Pathological defenses are characterized by rigidity, extensiveness, and overgeneralization (used in connection with many people or situations). They are also inappropriate, being out of phase with the developmental level of the individual, or maladaptive for the present situation (cf. Lichtenberg & Slap, 1972; Loewenstein, 1967). In addition, they tend to distort reality perception, and to interfere with other ego functions. When defenses occur in these contexts, they may contribute to pathology.

However, some psychoanalysts warned against equating defense mechanisms with pathology, as when Glover (1937) wrote "There is an unwarranted tendency to disapprove of projection as if it were a bugaboo rather than a mental mechanism" (p. 131). Anna Freud (1965) also stressed that defenses are not necessarily pathological, and that when evaluating the pathology of defense use, one should consider both balance (i.e., use of several different defenses rather than just one) and

intensity of use. Further, the age adequacy of the defenses used should be evaluated. For example, the use of denial and projection are normal in childhood, but may be associated with pathology in later years. The use of age inappropriate defenses may be due to fixation or regression, such that defenses that were used in the past to ward off dangers to the ego are being continued into the future when the dangers are no longer present.

In other psychoanalytic writings (e.g., Bibring, Dwyer, Huntington, & Valenstein, 1961; Lampl-de Groot, 1957; Wallerstein, 1967), defenses are described as serving a dual function, being either adaptive or pathological. A defense is adaptive if its function is to contribute to maturation, growth, and mastery of the drives. However, if the primary function is to ward off anxiety, strong instinctual demands, and unconscious conflict, the defense may be considered pathological.

Further discussion of this issue has stressed that a defense may serve both functions, both promoting and hindering ego development. For example, denial interferes with the perception of reality, but also protects the ego from being overwhelmed by information that it is not prepared to accommodate. Projection may distort relations with others, but may also provide insight into others. Excessive identification with others may interfere with personal development, but may also serve as a basis for learning and for compassion (van der Leeuw, 1971).

Thus, it is important to recognize that, at some level the defense is serving an adaptive purpose—namely, to protect the individual from excessive anxiety, and to protect the self and self-esteem. As noted by Vaillant (1994), to thoughtlessly challenge a patient's use of defenses without considering the adaptive purpose that is being served is likely to evoke undue anxiety and/or depression, and to rupture the therapeutic alliance. Defenses should be considered as clues to underlying problems and "not be mindlessly eradicated" (Vaillant, 1994, p. 49).

In connection with the issue of defenses as adaptive, one further issue to be considered is the question of "successful" versus "unsuccessful" defenses. Within psychoanalytic theory the "success" of a defense is not determined by the issue of whether it serves an adaptive function. Rather, "unsuccessful" and "successful" is determined by whether the defense must be used repeatedly in order to prevent a breakthrough of the warded-off thought or impulse. Unsuccessful defenses must be used repeatedly and do not change the warded off impulses into anything else; rather, they block their discharge, and in the process interfere with other ego functions. A successful defense, on the other hand, brings about a cessation of that which is warded off (Fenichel, 1945). This latter type of defense is referred to as sublimation. The discharge

of a drive is not blocked; rather, the defense of sublimation functions to modify the aim and/or the object of the drive.

DEFENSE AS PART OF NORMAL DEVELOPMENT

As an issue related to the question of pathology, psychoanalytic theory has for many years considered defenses to be a necessary part of normal development. Freud (1937) wrote that it is “doubtful whether the ego could do without them altogether during its development” (p. 237). As he described, when the child’s ego is still weak, defense mechanisms protect the ego from painful affects that would disrupt its functioning and development. It is only when ego development is complete that the use of defenses may have negative consequences.

However, on reflection, the limiting of the adaptive function of defenses to childhood seems rather arbitrary. It is likely that ego development continues into adulthood, in which case defenses could continue to serve an adaptive function. Further, under conditions of extreme stress or trauma, the defense mechanisms may protect the stability and integration of the ego. As Lowenstein (1967) wrote, “Defenses are phenomena serving to protect the integrity of the ego organization. Thus their function is implicitly one of adaptation” (p. 800).

DEFENSES AS UNCONSCIOUS

A different type of question that has been raised about defenses is their status as unconscious mental mechanisms. If the purpose of defenses is to disguise thoughts and feelings so as to protect the ego, then such disguise can only be effective if the individual is unaware of its occurrence—that is, if the defense is unconscious. However, if the defense is unconscious, how can it be known?

This issue is clarified by distinguishing between the concept of defense mechanism and the manifestation of defense behaviors (Cramer, 2000, 2001). Defense mechanisms are theoretical abstractions used to describe the way the mind works. On the other hand, defense behaviors are the observable behavior, affects or ideas that serve defensive purposes (Wallerstein (1967, 1985). These behaviors, and their defensive function, may be observed by others; in this way, the use of the defense may be known. However, at the same time, the defense may be unknown to its user, in that she or he may be unaware of the defense

behavior (e.g., unaware of a thought: "I don't hate him") or, although aware of the thought, may be unaware of its defensive purpose ("I don't harbor negative feelings toward others"), or may be unaware of the impulse or affect that prompted the defense ("I really hate him"). Any or all of these conditions may be unconscious. However, if the purpose of the defense or the underlying impulse were to become conscious, the defense no longer would serve its concealing function, and so is likely to be abandoned. An experimental demonstration of this assumption is provided later in this essay.

The unconscious status of defense mechanisms is related to a further question: Are defenses and coping mechanisms the same thing? In the psychological literature there is frequent reference to coping behaviors that are used to deal with adverse situations. Sometimes defenses are included as examples of coping behavior, or vice versa, as in the Defensive Functioning Scale (DFS) of *DSM-IV*, which unfortunately blurs an important distinction between the two types of behavior.

However, there are several respects in which coping and defense mechanisms differ. As discussed above, defenses occur without conscious effort and without conscious awareness (i.e., they are unconscious), whereas coping mechanisms involve a conscious, purposeful effort. Defenses occur without conscious intentionality, and function to change an internal psychological state, whereas coping strategies are carried out with the intent of managing an external problem situation. Further, coping mechanisms are generally conceived of as being dependent on the situation, whereas defenses are considered to be a relatively stable characteristic of an individual.

On the other hand, it is a mistake to contrast defenses as being part of psychopathology and associated with maladjustment, whereas coping mechanisms are part of normal psychological functioning and facilitate positive adjustment. As discussed above, defense mechanisms are part of "the normal human mind" (Lowenstein, 1967, p. 797) and are considered to be essential for normal psychological development. Further, there is evidence that coping mechanisms may be associated with increased emotional distress and other negative outcomes (Aldwin & Revenson, 1987; Bolger, 1990; Carver & Scheier, 1994; Watson & Hubbard, 1996). Thus, coping and defense mechanisms cannot be differentiated on the basis of normality and pathology.

EMPIRICAL RESEARCH EVIDENCE SUPPORTING THE THEORY OF DEFENSE MECHANISMS

We turn now to empirical evidence that supports the theory of defense mechanisms discussed above. In the research studies discussed below, the focus is on the use of three defenses—denial, projection, and identification. These defenses were selected to represent three levels of maturity, both in terms of increasing cognitive complexity, and in terms of the age at which they develop. Denial is the least complex defense, at base involving only the attachment of a negative marker (“no” or “not”) to a perception, thought, or feeling, and is normally found in young children. Projection is cognitively more complex. It functions by placing disturbing thoughts or feelings outside of the self, attributing them to someone or something else. Cognitively this requires the ability to differentiate between internal and external, and to have developed internal standards that may judge certain thoughts or feelings to be unacceptable.

Identification as a defense is yet more complex. Rather than attempting to change reality, identification involves a change in the self. As a result of this change, the person becomes more like some admired individual or group, and, in so doing, acquires a sense of belonging and security. Cognitively, this requires the ability to differentiate between self and other, to differentiate among many “others” to form enduring mental representations of those others, and to take on as one’s own the qualities of others that support security and self-esteem, and to reject those that do not (Cramer, 1987). This is sometimes seen in the phenomenon of “identification with the aggressor” (cf. A. Freud, 1936).

Demonstration that the Use of Defenses Protects the Self from Psychological Upset

To avoid the logical problem of asking individuals to self-report on the use of mental mechanisms of which they are unaware, in the experiments reported below narrative material was collected from each person and then coded for the presence of defenses, using a rating method that has been shown to be reliable and valid (Cramer, 1991b, 2006; Hibbard, Farmer, Wellls et al., 1994; Porcerelli, Thomas, Hibbard, & Cogan, 1998). These research studies support the theoretical assumption that the function of the defense is to protect the person from experiencing excessive anxiety, undue negative affect, and/or losing self-esteem.

In these studies, college students were exposed to conditions of stress which could be expected to increase anxiety and negative reactions. For example, in one investigation students were seen individually and were asked to make up a story to a set of four pictures, during which time the examiner maintained a neutral attitude. Then, a second set of stories was requested. For half of the students, the examiner became extremely critical. The other half of the students received no criticism.

The results of this intervention were striking. When queried, the students in the criticized group reported feeling angry and anxious, negative affects that were not reported by the control group. Further, the criticized students showed a statistically significant increase in their use of the defenses of projection and identification—defenses appropriate for their age group. This increase may be understood as a reaction to their increasing negative affect and the attack on their self-esteem—that is, as an attempt to protect themselves from these negative feelings. Students in the control group did not show a change in the use of defense mechanisms. Thus, as predicted by theory, an increase in negative affect resulted in an increase in defense use (Cramer, 1991a).

A different kind of stress was used in a second study with college students. Here, students were given false information regarding their scores on a measure of sex-role orientation. Half of the men and half of the women were told they had a highly feminine orientation; the other half were told they had a highly masculine orientation. Subsequent inquiry indicated that the cross-sex feedback aroused negative affect. Narrative stories provided after the feedback were compared for defense use with those provided prior to the feedback. The results showed that the introduction of cross-sex feedback (e.g., a male being told he had a feminine orientation) resulted in an increase in defense use, and especially the defense of identification—a defense closely related to the issue of identity (Cramer, 1998).

Several other studies have demonstrated that providing bogus feedback to create a threat to self-esteem resulted in an increase in defense use, and that this increase was greater if the threatened personality trait was central to the person's own self-representation (Grzegolowska-Klarkowska & Zolnerczk, 1988, 1990; Schimel, Greenberg, & Martens, 2003). This same result—an increase in age-appropriate defense use following an intervention that aroused negative affect—has also been demonstrated with children (Cramer & Gaul, 1988; Sandstrom & Cramer, 2003).

The effect of stress on defense use has also been demonstrated experimentally by showing a relation between an increase in measures of physiological functioning and the use of defenses. In this study, participants were required to engage in stressful tasks (e.g., counting

backwards by 13s, while being urged to go faster), and then provided six samples of narrative material. At the same time as this material was provided, measures of diastolic blood pressure (DBP) and skin conductance level (SCL) were taken. Since stress is known to increase autonomic nervous system reactivity, it was expected that both DBP and SCL would increase.

Specifically, since previous research has shown that responding to stress with cognitive activity is associated with an increase in DBP (e.g., Fowles, 1980; Obrist, 1981), it was predicted that an increase in DBP would be associated with use of the defense of identification, a defense that is cognitively complex and thus requires cognitive work to carry out. There is also evidence that the attempt to inhibit, or deny emotion in response to stress is associated with increased SCL (e.g., Hughes, Uhlman, & Pennybaker, 1994; Pennebaker & Chew, 1985). Thus it was predicted that an increase in SCL would be associated with the use of denial. The results of the study confirmed these predictions. Although pre-stress physiological reactivity was unrelated to subsequent defense use during stress, physiological reactivity during the stress experience was clearly related to defense use at that time, in the ways predicted (Cramer, 2003). Thus, in these and other experimental studies (see Cramer, 2006), it has been clearly demonstrated that the use of defenses will increase under conditions of stress. The design of these studies also shows that it is the presence of stress that is responsible for the increased use of defenses.

Defense Mechanisms May Be Associated with Psychopathology

We shift now from the experimental demonstration of defense use to the topic of defense and psychopathology. Although, as discussed above, defenses are not themselves pathological, when used excessively, or when age inappropriate, they may be associated with various pathological conditions. At this point, we do not have the longitudinal data that would be necessary to decide if the use of certain defenses results in the development of psychopathology, or if the presence of pathology results in the increased use of certain defenses.

Nevertheless, there are many research studies that illustrate the relation between defense use and psychopathology. In an early study, Vaillant (1971, 1977) followed a group of Harvard men, beginning while they were in college and continuing for the subsequent 30 years. Defense use was evaluated through clinical interviews. Although this

study was not designed to determine the direction of causal relation between defense use and pathology, it did demonstrate that the use of more mature defenses during adulthood was positively related to higher levels of lifetime adjustment. Further, during adulthood the use of immature defenses, such as denial, dissociation, and projection, was related to the presence of psychiatric illness. Similar relations were found in a sample of lower- and working-class men (Vaillant, 1983; Vaillant & McCullough, 1998).

In other studies of non-patient samples, it is typically found that immature defenses are associated with a greater number of pathological symptoms, whereas more mature defenses are associated with fewer symptoms. Further, immature defenses (e.g., denial, projection) are related to Cluster B personality disorders, neurotic defenses (e.g., displacement, rationalization) are related to dependent personality disorder, and mature defenses (e.g., sublimation, altruism) are negatively related to borderline, dependent, and passive-aggressive disorders (Cramer, 1999; Hibbard & Porcerelli, 1998; Johnson, Bornstein, & Krukoni, 1992; Porcerelli, Cogan, Markova, Miller, & Mickens, 2011; Sinha & Watson, 1999). It is important to note that when defense assessment is not based on self-report (i.e., is based on interview or ratings), it has been demonstrated, through statistical factor analysis, that defenses constitute a dimension that is independent from symptom report (Perry & Hoglend, 1998).

Other research (Vaillant, 1994) has shown that the diagnosis of narcissistic personality disorder, based on clinical interview, was associated with the defense of denial/dissociation—a defense that functions to ignore negative information about the self or the environment. Also, in this study, the diagnosis of paranoia was found to be related to the use of projection—a defense that appears to justify the unwarranted fears of the external world by attributing one's own aggressive impulses to others. The results of Vaillant's (1994) study also showed that the diagnosis of antisocial personality disorder was associated with the use of the acting out defense as well as with denial/dissociation. Other research has shown a correspondence between the level of immaturity of Axis II personality disorders, and the level of immaturity of the defenses used (Cramer, 1999).

Thus, in samples of nonclinical college students and community members, there is clear evidence that defense use is related to symptoms of psychopathology, and that different types of personality disorders are related to different types of defenses. As Vaillant concluded, defense mechanisms are "a valuable diagnostic axis for understanding psychopathology" (1994, p. 49).

Other research with college students has shown that defense use is related to pathological aggression, and that this relation depends on the object of the violent behavior. Men who were aggressive toward strangers were likely to use the defense of denial, whereas violence toward partners was associated with the use of projection (Porcerelli, Cogan, Kamoo, & Leitman, 2004). It has also been found that parents who abuse their children are more likely to use the defenses of projection and denial (Brennan, Andrews, Morris-Yates, & Pollock, 1990; Cramer & Kelly, 2010). To understand this connection between violence and defense use, it seems likely that the use of these immature defenses distorts the aggressor's view of the victim, by using projection to erroneously attribute hostile intentions to the victim, and by using denial to not recognize the pain caused to the victim. In this way, the aggressor's violent behavior is "justified."

In studies of clinical patients, research findings have consistently demonstrated that patients differ from non-patients in their use of defense mechanisms. The typical finding is that patients make greater use of immature defenses and less use of mature defenses, as compared to a control group of non-patients (e.g., Bond, 1992; Sammallahti & Aalberg, 1995; Simeon, Guralnik, & Schnneidler, 2002). However, contrary to the findings with most patients, a study of anorexic adolescents found that they used more mature defenses than adolescents with other diagnoses, as well as using more immature defenses, as compared to non-patient adolescents (Gothelf, Apter, Ratzoni et al., 1995).

Defense style has also been found to be related to suicide attempts. Among a group of 156 adult inpatients diagnosed with major depressive disorder, the occurrence of suicide attempts just prior to admission was found to be significantly related to the use of immature defenses, especially passive aggression, acting out, projection, and autistic fantasy. Patient characteristics such as age, sex, marital status, and education were not related to suicide attempts (Corruble, Bronne, Falissard, & Hardy, 2004).

A paper by Bond (2004) has reviewed a large number of studies concerned with the relation between defense use and specific diagnoses, including personality disorders, depression, anxiety, eating disorders, and trauma (PTSD). In general, the findings indicated that the Defense Scale Questionnaire (DSQ; Bond, 1992) is useful for differentiating between patients with personality disorder and non-patients.² Immature defenses, as assessed with the DSQ, are used more frequently by individuals with personality disorders, and mature defenses are used less

2. Note, however, that a recent paper has raised questions regarding the use of the DSQ (Wilkinson & Ritchie, 2015).

frequently. Further, patients with borderline personality disorder differ from other personality disorders in their use of immature, image-distorting defenses (splitting, omnipotence/devaluation, and primitive idealization).

Thus there is evidence that defense use is differentially related to different diagnoses, although the fact that patients with different diagnoses may use several different defenses at the same time often makes it difficult to link a specific diagnosis with a specific defense. Also, difficulties in demonstrating an empirical relationship between defenses and diagnostic category may be related to the problem of assessing defense mechanisms. It is noteworthy that the majority of successful studies have employed interview or rating methods, while the unsuccessful studies relied on self-report measures. As discussed above, there is a certain logical inconsistency in asking people to self-report on their use of defenses, which are, theoretically, mechanisms that operate outside the realm of self-awareness.

This difference in results, depending on whether defenses were assessed by self-report or observer measure, was illustrated in a study by Presniak, Olson, and MacGregor (2010). Samples of university students were assessed for the relation of borderline and antisocial features with either the 7 defenses of the DSQ or the 12 defenses of an observer-based defense measure (the Defense-Q: MacGregor, Davidson, Barksdale, Black, & MacLean, 2003). All of the DSQ defenses are included in the Defense-Q. Using the DSQ, the defenses of acting out and passive aggression were related to both pathologies, but the relation was stronger for the borderline group. In addition, using the DSQ, the antisocial group showed greater use of denial and rationalization. When defenses were assessed using the observational Defense-Q, the results showed that the defenses of projection and turning against the self were higher in the borderline group, and devaluation and grandiosity were higher in the antisocial group. Thus the relation between pathology and defense use was clearly different, depending on whether a self-report or observational measure of defense was used, even though both measures included the same defenses.

DEFENSES AND PHYSICAL ILLNESS

Defense use has also been studied in clinical patients with serious medical problems. For example, among men and women who had been told by their physician that they had cancer, a notable percentage (19%) subsequently denied the presence of these problems (Aitken-Swan & Esson, 1959). Likewise, among patients who had been told by

their physician of having experienced a myocardial infarction, a number (20%) denied this, even when questioned directly (Croog, Shapiro, & Levine, 1971). In turn, the use of defenses can result in noncompliance with medical advice. Some patients, when faced with a diagnosis indicating a serious medical condition, fail to follow through on the treatment regime prescribed. Studies of these patients—cancer, diabetes, heart problems—find that those who do not comply with medical advice also show strong use of defense mechanisms (e.g., Farberow, 1980; Goldstein, 1980; Oettingen, 1996). Although these defenses protect them from anxiety about being ill, they also keep them from recognizing the importance of obtaining the needed treatment. Thus, for patients for whom continuing compliance with a therapeutic regimen is important, it is useful to know something about their use of defenses.

In other patients, the use of defenses may result in either an under-reporting, or an over-reporting of symptoms, as when the patient misinterprets the presence of anxiety as an indication of heart problems (cf. Schwebel & Suls, 1999; Steptoe & Vogeles, 1992). An early study by Vaillant, Shapiro, and Schmitt (1970) found that one-third of patients admitted to a general hospital had requested hospitalization for reasons that were partly or completely independent of organic problems—that is, were psychologically based.

Vaillant (1994) has written “Clinical medicine appreciates that almost half of all visits to general physicians are made by patients with functional disorders—in other words, by patients with psychological illness or problems in living who have displaced, projected, repressed or transformed these problems into serviceable medical complaints” (p. 49). Similar results were reported by von Korff, Shapiro, Burke et al. (1987). However, primary care providers may not always recognize the psychiatric disturbance that is present in these patients.

In a more general sense, physical health status has been found to be related to defense use. In Vaillant’s (1993) study, the use of immature defenses during middle adulthood predicted objectively rated health problems, as compared to the use of mature defenses. The health of these men, when studied in old age, was also found to be related to defense use in late adulthood: mature defense use predicted positive physical health (Malone, Cohen, Liu, Vaillant, & Waldinger, 2013).

DEFENSE USE AND PSYCHOTHERAPY

Therapists who practice psychodynamically oriented treatment realize that the use of defense mechanisms may be contributing to the patient’s illness. One goal of this therapy is to recognize these defenses

and the motives behind them, and to help the patient see how they interfere with successful adaptation. The expectation, then, is that the use of immature defenses will decrease as a result of therapy, and that this will be accompanied by a decrease in pathological symptoms.

In general, research has shown that the use of immature defenses decreases after therapy, and the use of mature defenses increases (cf. Cramer, 2006). For example, intensive study of inpatients in a psychiatric hospital has demonstrated that defense mechanisms, and especially denial, decreased after an extended period of psychodynamically oriented therapy (Blatt & Ford, 1994; Cramer & Blatt, 1993). This change in defense use was associated with a decrease in bizarre, disorganized pathological symptoms. Further, patients who showed the greatest improvement over this period also showed the greatest decrease in defense use, especially the use of immature defenses.

Long-term outpatient therapy has also demonstrated significant decrease in maladaptive (immature) defenses, and this decrease was related to a decrease in observer-rated depression, less psychological distress, and improved score on ratings of Global Assessment Functioning (GAF; Bond & Perry, 2004). Studies of defense change following short-term therapy have generally found a decrease in the use of immature defenses, which may be associated with a decrease in symptoms (Akkerman, Carr, & Lewin, 1992; Kneepkens & Oakley, 1996). However, not all measures of defense functioning have demonstrated this change (e.g., Albucher, Abelson, & Ness, 1998; Bond, Perry, Gautier et al., 1989). Again, results differ by diagnosis and measure used to assess defenses.

The kind of change in defenses that can occur over the course of short-term and long-term therapy has been described in a study of four clinical cases (Perry, Beck, Constantinides, & Foley, 2009). Patients differed in their rate of defense change, moving from immature to neurotic to mature. More rapid initial change was associated with depressed status, whereas defense change in personality disorders was slow to occur. As found in other studies, defense change was related to symptom decrease and to improvement in other aspects of functioning.

The observed relation between defense change and symptom change does not address the issue of causality, or direction of change. It cannot answer the question of whether the decrease in immature defenses results in a decrease in symptoms, or whether symptom decrease results in less use of immature defenses. Nevertheless, these studies do show that defense mechanisms are clearly related to psychological functioning.

An additional question—whether initial defense use at the beginning of therapy is related to therapy outcome—has also been investigated. Hoglend and Perry (1998) demonstrated that an initial clinical assess-

ment of defense maturity predicted a positive treatment outcome with depressed patients, and did this more successfully than did an initial assessment of GAF. After six months of treatment, depressive patients who used more mature defenses at intake had higher subsequent ratings for GAF, and lower ratings for Global Severity Index (GSI; Hoglend & Perry, 1998). Again these findings differed depending on the measure of defense used. The significant relations between defense use and symptom change were found when these were assessed through clinical judgment, but not when self-report measures were used.

DEFENSES AND THERAPEUTIC ALLIANCE

Since therapeutic alliance has been found to predict positive outcome of therapy, factors that reduce alliance are likely to reduce the effectiveness of therapy. Several investigators have focused on the relations among defense use, therapeutic alliance, and treatment outcome. One study found that initial adaptive defense style predicted better self-reported therapeutic alliance, but did not predict continuation in therapy (Bond & Perry, 2004). Another study (Mullen, Blanco, Vaughn, & Roose, 1999) found that the use of immature defenses (especially image-distorting) by depressive patients at baseline was predictive of discontinuing therapy. However, a different study (Hersoug, Sexton, & Hoglend, 2002) found that level of defense use did not predict therapeutic alliance or therapy outcome. A further study found patient defense functioning at the beginning of treatment to be unrelated to therapeutic alliance (Siefert, Hilsenroth, Weinberger, Blagys, & Ackerman, 2006).

Nevertheless, there is evidence that careful interpretation of neurotic defenses improved the alliance between patients and therapist (Gerostathos, de Roten, Berney, Desplan, & Ambresin, 2014). The different results from various studies suggest that the relation between initial defense use and subsequent therapy is affected by a number of additional factors, such as patient diagnosis, length of treatment, and therapist's style, and perhaps method of defense assessment.

Therapeutic alliance has also been found to be predicted by the "match" between the patient's initial level of defense (immature, neurotic, mature) and the therapists' style of intervention (supportive or exploratory). For example, supportive intervention resulted in greater alliance in patients with low level defenses, whereas exploratory intervention produced better alliance in patients with high level defenses (Despland, de Roten, Despars, Stigler, & Perry, 2001). In another investigation (Winston, Winston, Samstage, & Muran, 1994), therapist style—either insight-oriented or confrontational—was related to pa-

tients' defense change over a period of 40 weekly sessions. The insight patients showed a significant decrease in the use of neurotic defenses (e.g., intellectualization, reaction formation, displacement), but no change in immature defenses. The confrontational patients showed no change in either level of defense.

The relation between therapist's approach and defense use was examined in a recent case study (Josephs, Sanders, & Gorman, 2014). The patient was a single, older woman who had suffered from chronic mental illness and had been in intensive psychodynamic therapy for much of her adult life. Over a period of 84 taped sessions, both the therapist's approach and the patient's use of defense mechanisms were rated. The patient showed a mix of mature and immature defenses, with an increase in adaptive, mature defenses over time. Two aspects of the therapist's actions were found to predict this defense change: first, "confronting the patient's role in a problem, even if perceived as tactless," and second "supporting a committed patient" (p. 159). Most interesting, a bidirectional relation was found between confronting the patient and an increase in adaptive defenses. Confrontation was followed by an increase in adaptive defenses, and an increase in adaptive defenses was followed by more confrontation. This bidirectional relation between therapist's confronting approach and defense use, however, was not found for the supporting approach. As in the studies above, these results are consistent with the idea that therapeutic results are better when the approach of the therapist is matched with the patient's level of defense use.

Further, as discussed above, it is important for the therapist to keep in mind that the defenses of the patients are serving an adaptive function. Thus head-on confrontation too early in the therapy will not only be ineffective, but is likely to result in a shoring up of defenses and premature termination (Dozier & Kobak, 1992). For example, young adults who tend to dismiss, or deny the importance of relationships with others also report extremely positive relationships with their parents, and minimize or deny the importance of childhood experiences. As Dozier and Kobak (1992) have pointed out, such an individual is likely to show considerable resistance to insight-oriented psychotherapy. For the clinician, it is important to recognize not only that this type of self-report is likely defensive, but also to understand what it is defending—namely, that through these distortions the patient has found a way to maintain an attachment to parents—and that this defense is a source of resistance to therapy.

On the other hand, this does not mean that the therapist should avoid recognizing the patient's defenses. As indicated by Pennebaker (1993), "In the short run, confronting upsetting experiences may be psycholog-

ically painful and physiologically arousing. In the long run, however, the act of psychologically confronting emotionally upsetting events is associated with improved physical and psychological health" (p. 546).

DOES DEFENSE USE DIFFER FOR MEN AND WOMEN?

Interestingly, the question of defense use, as related to biological sex, has not been considered by psychoanalytic theory (e.g., Cooper, 1998; Fenichel, 1945; A. Freud, 1936; Vaillant, 1976). However, psychoanalytic theory does postulate sexual differences in personality that are relevant for the consideration of defense use. For example, both S. Freud (1932) and Deutsch (1944) theorized that female sexual identity includes a component of turning aggression inward, which is consistent with the use of the defense of turning against the self (TAS). In addition to Deutsch (1944), Erikson (1964) described women's sexual identity as being inwardly focused, in contrast to men who are outwardly oriented and focused on the external world. Thus theory suggests that women's defenses would be of the type that modify inner reality—such as denial, reversal, reaction formation, or TAS. In contrast, men's defenses would be expected to be outwardly directed, and to externalize conflict and affect, such as projection or turning against the object (TAO). Research with community and college non-patient samples generally confirms these expectations, with some exceptions (cf. Cramer, 1991b, 2006).

However, closer inspection has revealed that it is not biological sex that is the determining factor of sex differences in defense use. Rather, gender orientation appears to be more important than biological sex. For example, males *and* females who have been determined to have a masculine orientation both made strong use of the "masculine" defense of TAO (e.g., Evans, 1982), and of projection (Cramer, in press). Likewise, the "feminine" defenses of TAS and reversal occur most frequently among people with a feminine sexual orientation, regardless of whether they are biologically male or female (Lobel & Winch, 1986).

There is also evidence that use of the same defense may have different implications for men and women. Men who were independently assessed as relying on projection were clinically rated as being distrustful and transferring blame to others, as manipulative, guileful and hostile toward others, and as being anxious and depressed. In contrast, women who were independently assessed as relying on projection were clinically rated as lively, positive and extraverted, and did not show the wariness and mistrust shown by the men. For women, the use

of projection, and especially the externalization of anger, was negatively related to the presence of anxiety and depression. Rather, the use of the defense of displacement by women has been found to be related to psychiatric symptoms. Interestingly, the use of the immature defense of denial by men and women did not show different gender implications. Both sexes were clinically rated as having an unstable personality and unclear thought processes, and as being egotistical, self-dramatizing, and self-indulgent (Cramer, 2002; Watson, 2002).

DEFENSE USE AND AGE

One further factor, when considering the use of defense mechanisms, is the factor of age. There is considerable research evidence showing that, among children and adolescents, defense use is related to age. In a series of empirical studies, it has been shown that young children, up to the age of about 7 years, rely on the defense of denial to ward off anxiety and protect the self. At this point, the use of denial declines and the defense of projection becomes predominant. During this time, there is also a gradual increase in the use of identification, so that, by late adolescence, identification becomes a predominant defense (Cramer, 1987, 1997; Cramer & Brilliant, 2001; Porcerelli et al., 1998). Nevertheless, projection continues to be a frequently used defense, and as illustrated above, becomes important for understanding differences in personality.

One may ask why this change in children's defense use occurs. Part of the answer is that, as they develop, children's cognitive functioning becomes more complex, allowing a cognitively simple defense such as denial to be replaced by the more complex operations involved in projection. But a second, and important, reason is that the child begins to "see through" the defense of denial. Studies of children's understanding of defenses has shown that, at age 5–6 years, they have little understanding of how denial functions, but 8-year-olds show greater understanding. In turn, projection is better understood by 11-year-olds than by 8-year-olds, although many 11-year-olds have difficulty understanding projection, and virtually no 5-year-olds show understanding of projection (Chandler, Paget, & Koch, 1978; Dollinger & McGuire, 1981; Whiteman, 1967). Our research has shown that as children develop the capacity to "see through" the defense of denial, they abandon its use. Similarly, as they develop the capacity to see through the defense of projection, they are less likely to use this defense. Importantly, the degree of understanding of the defense, from none to partial to full un-

derstanding, is linearly related to the decrease in its use (Cramer & Brilliant, 2001). Similar results have been obtained with college students (Newman, Duf, & Baumeister, 1997).

Thus, as children grow, they ordinarily develop an understanding of how defenses function, and in turn abandon the use of immature defenses, substituting others that are cognitively more complex. These findings indicate that, for defenses to continue to function and protect the individual from undue anxiety and threat to the self, the defenses that are typical of early childhood must be abandoned and replaced with a different mechanism that is not yet understood. These findings also support the assumption that the usefulness of a defense mechanism depends on its unconscious status. Further, they are consistent with the assumption that therapeutic interpretation of defenses—that is, bringing them into consciousness—will result in decreased use.

Earlier, it was pointed out that defenses that were used earlier in life to ward off anxiety and dangers to the ego may be continued into the present, when the dangers are no longer present. When change in defense use does not occur over the years of childhood and adolescence, this may reflect early psychological disturbance. The opportunity to investigate this possibility came from a longitudinal study of children (Cramer & Block, 1998). Among a group of young adults from the San Francisco Bay area who had been followed from early childhood, there were some who were found to still be relying on the immature defense of denial at age 23. Inspection of their early life revealed that, at age 3, they had been rated by their nursery school teachers on a variety of psychological traits, both adaptive and maladaptive. When these early ratings were correlated with the use of denial at age 23, it became clear that strong users of denial had shown signs of psychological disturbance at age 3. At that age, they had been rated as having low self-worth, being emotionally labile/inappropriate, lacking intellectual competence and pro-social skills, having poor impulse control and poor interpersonal relationships. It seems likely that these children made strong use of the defense available at that age—the defense of denial—in order to protect the self. In turn, the use of denial became ingrained in their personality, and continued as a significant defense into young adulthood.

Defense use, as related to adult age, has also been studied. Cross-sectional studies, in which individuals within one age group are compared with individuals in another age group, generally show that older individuals use fewer immature defenses, as compared to adolescents, who use fewer mature defenses (Costa, Zonderman, & McCrae, 1991; Romans, Martin, Morris, & Herbison, 1999; Whitty, 2003). This age dif-

ference is clearest when comparing late adolescence with middle age; the difference between middle age and old age is often not significant (e.g., Segal, Coolidge, & Mizuno, 2007; Yu, Chamorro-Premuzic, & Honjo, 2008). Although these studies show age *differences* in defense use, they cannot speak to the question of defense *change* with age. Only longitudinal studies can provide this information. In Vaillant's (1971, 1993) study of Harvard men, the use of immature defenses decreased between late adolescence and adulthood (age 35), and mature defenses increased. In a second longitudinal study with college-graduate women, the use of the immature defense of denial decreased between age 21 and age 43, whereas the more mature defenses of intellectualization and reaction formation increased (Helson & Moane, 1987).

However, a third longitudinal study of two different community samples of individuals living in the San Francisco Bay area found that, in each sample, the use of denial had increased between age 18 and age 38, while the use of identification decreased (Cramer, 2012). This greater use of denial has also been found in some cross-sectional adult samples (e.g., Diehl, Coyle, & Labouvie-Vief, 1996). The discrepancy in findings regarding the immature defense of denial—does it decrease or increase with age—may be due to sample differences, or to unique life experiences. The persons in the samples in which denial increased were of an earlier generation, born into the economic stress of the Great Depression, and lived through and/or participated in two large international wars. In conditions of such extreme stress, from which there is no escape, denial may be the most adaptive defense, and may become entrenched in the personality.

Apart from these social factors, several hypotheses have been suggested to explain why defenses change in adulthood. The regression hypothesis (Gutmann, 1964) suggests that as people grow older they may return (regress) to using defenses that were characteristic of an earlier period of development, and thus make more use of immature defenses. Alternatively, Vaillant (1977) has proposed a growth hypothesis, in which older people use defenses that are less distorting of reality, and hence an increase in mature defenses. A third hypothesis (McCrae, 1984) is that age differences in defense use are attributable to different types of stress that are experienced by adults of different ages. As compared to younger adults, older persons commonly experience loss—of loved ones, of occupation, of income. These losses may be associated with a decrease in self-esteem, which then brings new defenses into play. This contextual view has also been suggested by Aldwin (1992), Friedman (1993), and Wertheimer (1983). Older adults also experience physical changes involving loss—of health, of strength, or control—which in turn may interfere with the use of previous defenses and pres-

age the regression to earlier, less mature mechanisms. In this case, the attempt to minimize associated negative emotions through the use of defenses such as denial, may be considered adaptive (Segal et al., 2007).

FINAL THOUGHTS

One goal of psychotherapy is to relieve the patient from disturbing symptoms, and to make it possible for him/her to develop more adaptive responses to stressful situations. Thus a decrease in pathological symptoms may be used as evidence for the success of therapy. While it is important to be able to demonstrate symptom change in justifying the efficacy of treatment, it is also important to be able to explain how/why that symptom change occurred. If we want to conclude that psychotherapy was responsible, then it is important to be able to point to some intra-psychic change that is responsible for, or at least associated with, the symptom change. Being able to demonstrate change in defense mechanism use provides this information. Just as the effect of medications can be explained by the changes they produce in the functioning of neurotransmitters, the effect of "talking therapy" can be explained by changes produced in defense mechanism functioning.

It is also worth considering the role of defense mechanisms in the clinician's (therapist's) own functioning. In some cases, it is possible that the therapist's own defenses may interfere with a clear perception of the patient. In this regard, one may remember the fate of Red Riding Hood, who, in her attempt to help "Grandma," failed to perceive the true character of her patient.

REFERENCES

- Aitken-Swan, J., & Esson, E. C. (1959). Reactions of cancer patients on being told their diagnosis. *British Medical Journal*, *1*, 779-783.
- Akkerman, K., Carr, V., & Lewin, T. (1992). Change in ego defenses with recovery from depression. *Journal of Nervous and Mental Disease*, *180*, 634-638.
- Albucher, R. C., Abelson, J. L., & Ness, R. M. (1998). Defense mechanism changes in successfully treated patients with obsessive-compulsive disorder. *American Journal of Psychiatry*, *155*, 558-559.
- Aldwin, C. M. (1992). Aging, coping, and efficacy: Theoretical framework for examining coping in life-span developmental context. In M. L. Wykle, E. Kahana, & J. Kowal (Eds.), *Stress and health among the elderly* (pp. 96-113). New York: Springer.

- Aldwin, C. M., & Revenson, T. A. (1987). Does coping help? A reexamination of the relation between coping and mental health. *Journal of Personality and Social Psychology, 53*, 337-348.
- American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders* (4th ed.). Washington, DC: Author.
- Berney, S., de Roten, Y., Beretta, V., Kramer, U., & Despland, J.-N. (2014). Identifying psychotic defenses in a clinical interview. *Journal of Clinical Psychology, 70*, 428-439.
- Bibring, G., Dwyer, T., Huntington, D. F., & Valenstein, A. F. (1961). A study of the psychological processes in pregnancy and of the earliest mother-child relationship. *Psychoanalytic Study of the Child, 16*, 9-72.
- Blatt, S. J., & Ford, R. Q. (1994). *Therapeutic change: An object relations perspective*. New York: Plenum.
- Bolger, N. (1990). Coping as a personality process: A prospective study. *Journal of Personality and Social Psychology, 59*, 525-537.
- Bond, M. (1992). An empirical study of defensive style: The Defense Style Questionnaire (DSQ). In G. E. Vaillant (Ed.), *Ego mechanisms of defense: A guide for clinicians and researchers* (pp. 127-158). Washington, DC: American Psychiatric Association.
- Bond, M. (2004). Empirical studies of defense style: Relationships with psychopathology and change. *Harvard Review of Psychiatry, 12*, 263-278.
- Bond, M., & Perry, J. C. (2004). Long-term changes in defense styles with psychodynamic psychotherapy for depressive, anxiety, and personality disorders. *American Journal of Psychiatry, 161*, 1665-1671.
- Bond, M., Perry, J. C., Gautier, M., Golderner, M., Oppenheimer, J., & Simand, J. (1989). Validating the self-report of defense styles. *Journal of Personality Disorders, 3*, 101-112.
- Brennan, J., Andrews, G., Morris-Yates, A., & Pollock, C. (1990). An examination of defense style in parents who abuse children. *Journal of Nervous and Mental Disease, 178*, 592-595.
- Carver, C. S., & Scheir, M. F. (1994). Situational coping and coping dispositions in a stressful transaction. *Journal of Personality and Social Psychology, 66*, 184-195.
- Chandler, M. J., Paget, K. F., & Koch, D. A. (1978). The child's demystification of psychological defense mechanisms: A structural developmental analysis. *Developmental Psychology, 14*, 197-205.
- Cooper, S. (1998). Changing notions of defense within psychoanalytic theory. *Journal of Personality, 66*, 947-964.
- Corruble, E., Bronne, M., Falissard, B., & Hardy, P. (2004). Defense styles in depressed suicide attempters. *Psychiatry and Clinical Neurosciences, 58*, 285-288.
- Costa, P. T., Zonderman, A. B., & McCrae, R. R. (1991). Personality, defense, coping and adaptation in older adulthood. In E. M. Cummings, A. L. Greene, & K. H. Karraker (Eds.), *Life-span developmental psychology* (pp. 277-293). Hillsdale, NJ: Erlbaum.
- Cramer, P. (1987). The development of defense mechanisms. *Journal of Personality, 55*, 597-614.
- Cramer, P. (1991a). Anger and the use of defense mechanisms in college students. *Journal of Personality, 59*, 39-55.

- Cramer, P. (1991b). *The development of defense mechanisms: Theory, research and assessment*. New York: Springer-Verlag.
- Cramer, P. (1997). Evidence for change in children's use of defense mechanisms. *Journal of Personality, 65*, 233-247.
- Cramer, P. (1998). Threat to gender representation: Identity and identification. *Journal of Personality, 66*, 335-357.
- Cramer, P. (1999). Personality, personality disorders, and defense mechanisms. *Journal of Personality, 67*, 535-554.
- Cramer, P. (2000). Defense mechanisms in psychology today: Further processes for adaptation. *American Psychologist, 55*, 637-646.
- Cramer, P. (2001). The unconscious status of defense mechanisms. *American Psychologist, 56*, 762-763.
- Cramer, P. (2002). Defense mechanisms, behavior and affect in young adulthood. *Journal of Personality, 70*, 103-126.
- Cramer, P. (2003). Defense mechanisms and physiological reactivity to stress. *Journal of Personality, 71*, 221-244.
- Cramer, P. (2006). *Protecting the self: Defense mechanisms in action*. New York: Guilford.
- Cramer, P. (2012). Psychological maturity and change in adult defense mechanisms. *Journal of Research in Personality, 46*, 306-316.
- Cramer, P. (in press). Using the TAT to assess the relation between gender identity and the use of defense mechanisms. *Journal of Personality Assessment*.
- Cramer, P., & Blatt, S. J. (1990). Use of the TAT to measure change in defense mechanisms following intensive psychotherapy. *Journal of Personality Assessment, 54*, 236-251.
- Cramer, P., & Blatt, S. J. (1993). Change in defense mechanisms following intensive treatment, as related to personality organization and gender. In W. Ehlers, U. Hentschel, G. Smith, & J. G. Draguns (Eds.), *The concept of defense mechanisms in contemporary psychology* (pp. 310-320). New York: Springer-Verlag.
- Cramer, P., & Block, J. (1998). Preschool antecedents of defense mechanism use in young adults. *Journal of Personality and Social Psychology, 74*, 159-169.
- Cramer, P., & Brilliant, M. (2001). Defense use and defense understanding in children. *Journal of Personality, 69*, 291-321.
- Cramer, P., & Gaul, R. (1988). The effects of success and failure on children's use of defense mechanisms. *Journal of Personality, 56*, 729-742.
- Cramer, P., & Kelly, F. D. (2010). Attachment style and defense mechanisms in parents who abuse their children. *Journal of Nervous and Mental Disease, 198*, 619-627.
- Croog, S. H., Shapiro, D. S., & Levine, S. (1971). Denial among male heart patients. *Psychosomatic Medicine, 33*, 385-397.
- Despland, J.-N., de Roten, Y., Despars, J., Stigler, M., & Perry, J. C. (2001). Contribution of patient defense mechanisms and therapist interventions to the development of early therapeutic alliance in a brief psychodynamic investigation. *Journal of Psychotherapy Practice and Research, 10*, 155-164.
- Deutsch, H. (1944). *The psychology of women* (Vol. 1). New York: Grune & Stratton.
- Diehl, M., Coyle, N., & Labouvie-Vief, G. (1996). Age and sex differences in strategies of coping and defense across the life span. *Psychology and Aging, 11*, 127-139.

- Dollinger, S. J., & McGuire, B. (1981). The child as psychologist: Attribution and evaluations of defensive strategies. *Child Development, 52*, 1084-1086.
- Dozier, M., & Kobak, R. R. (1992). Psychophysiology in attachment interviews: Converging evidence for deactivating strategies. *Child Development, 63*, 1473-1480.
- Erikson, E. H. (1964). Inner and outer space: Reflections on womanhood. In R. J. Lifton (Ed.), *The woman in America* (pp. 1-26). Boston: Beacon Press.
- Evans, R. G. (1982). Defense mechanisms in females as a function of sex-role orientation. *Journal of Clinical Psychology, 38*, 816-817.
- Farberow, N. L. (1980). Indirect self-destructive behavior in diabetics and Buerger's disease patients. In N. L. Farberow (Ed.), *The many faces of suicide: Indirect self-destructive behavior* (pp. 79-88). New York: McGraw-Hill.
- Fenichel, O. (1945). *The psychoanalytic theory of neurosis*. New York: Norton.
- Fowles, D. C. (1980). The three arousal model: Implications of Gray's two-factor learning theory for heart rate, electrodermal activity, and psychopathy. *Psychophysiology, 17*(2), 87-104.
- Freud, A. (1936). *The ego and the mechanisms of defense*. New York: International Universities Press.
- Freud, A. (1965). *Normality and pathology in childhood*. New York: International Universities Press.
- Freud, S. (1894). The neuro-psychoses of defence. In J. Strachey (Ed. & Trans.), *The standard edition of the complete psychological works of Sigmund Freud* (Vol. 3, pp. 45-61). London: Hogarth Press.
- Freud, S. (1896). Further remarks on the neuro-psychoses of defence. In J. Strachey (Ed. & Trans.), *The standard edition of the complete psychological works of Sigmund Freud* (Vol. 3, pp. 161-185). London: Hogarth Press.
- Freud, S. (1923). The ego and the id. In J. Strachey (Ed. & Trans.), *The standard edition of the complete psychological works of Sigmund Freud* (Vol. 19, pp. 12-66). London: Hogarth Press.
- Freud, S. (1926). Inhibition, symptoms and anxiety. In J. Strachey (Ed. & Trans.), *The standard edition of the complete psychological works of Sigmund Freud* (Vol. 20, pp. 77-174). London: Hogarth Press.
- Freud, S. (1932). The psychology of women. In J. Strachey (Ed. & Trans.), *The standard edition of the complete psychological works of Sigmund Freud* (Vol. 22, pp. 112-135). London: Hogarth Press.
- Freud, S. (1937). Analysis terminable and interminable. In J. Strachey (Ed. & Trans.), *The standard edition of the complete psychological works of Sigmund Freud* (Vol. 23, pp. 216-253). London: Hogarth Press.
- Friedman, R. S. (1993). When the patient intrudes on the treatment: The aging of personality types in medical management. *Journal of Geriatric Psychiatry, 26*, 149-177.
- Gerostathos, A., de Roten, Y., Berney, S., Despland, J.-N., & Ambresin, G. (2014). How does addressing patient's defenses help to repair alliance ruptures in psychodynamic psychotherapy? An exploratory study. *Journal of Nervous and Mental Disease, 202*, 419-424.
- Glover, E. (1937). Symposium on the theory of the therapeutic results of psychoanalysis. *International Journal of Psychoanalysis, 18*, 125-132.
- Goldstein, A. M. (1980). The "Uncooperative" patient: Self-destructive behavior in hemodialysis patients. In N. L. Farberow (Ed.), *The many faces of suicide: Indirect self-destructive behavior* (pp. 89-98). New York: McGraw-Hill.

- Gothelf, D., Apter, A., Ratzoni, G., Orbach, L., Weizman, R., Tyano, S., & Pfeffer, C. (1995). Defense mechanisms in severe adolescent anorexia nervosa. *Journal of the American Academy of Child and Adolescent Psychiatry*, 34, 1648-1654.
- Grzegłowska-Klarkowdka, H., & Zolnierczyk, D. (1988). Defense of self-esteem, defense of self-consistency: A new voice in an old controversy. *Journal of Social and Clinical Psychology*, 6, 171-179.
- Grzegłowska-Klarkowdka, H., & Zolnierczyk, D. (1990). Predictors of defense mechanisms under conditions of threat to the objective self: Empirical testing of a theoretical model. *Polish Psychological Bulletin*, 21, 129-155.
- Gutmann, D. L. (1964). An exploration of ego configurations in middle and later life. In B.K. Neugarten (Ed.), *Personality in middle and late life* (pp. 114-148). New York: Atherton Press.
- Helson, R., & Moane, G. (1987). Personality change in women from college to midlife. *Journal of Personality and Social Psychology*, 53(1), 176-186.
- Hersoug, A. G., Sexton, H. C., & Hogle, P. (2002). Contribution of defensive functioning to the quality of working alliance and psychotherapy outcome. *American Journal of Psychotherapy*, 56, 539-554.
- Hibbard, S., Farmer, L., Wells, C., Difillipo, E., Berry, W., Korman, R., & Sloan, P. (1994). Validation of Cramer's Defense Mechanism Manual for the TAT. *Journal of Personality Assessment*, 63, 197-210.
- Hibbard, S., & Porcerelli, J. (1998). Further validation of the Cramer Defense Mechanism Manual. *Journal of Personality Assessment*, 70, 460-483.
- Hibbard, S., Porcerelli, J. H., Kamoo, R., Schwartz, M., & Abell, S. (2010). Defense and object relational maturity on Thematic Apperception Test (TAT) scales indicate levels of personality organization. *Journal of Personality Assessment*, 92, 241-253.
- Hogle, & Perry, J. C. (1998). Defensive functioning predicts improvement in major depressive episodes. *Journal of Nervous and Mental Disease*, 186, 238-243.
- Hughes, C. F., Uhlmann, C., & Pennebaker, J. W. (1994). The body's response to processing emotional trauma: Linking verbal text with autonomic activity. *Journal of Personality*, 62, 565-585.
- Johnson, J. G., Bornstein, R. F., & Krukoni, A. B. (1992). Defense styles as predictors of personality disorder symptomatology. *Journal of Personality Disorders*, 6, 408-416.
- Josephs, L., Sanders, A., & Gorman, B. S. (2014). Therapeutic interaction with an older personality disordered patient. *Psychodynamic Psychiatry*, 42, 151-172.
- Kneepkens, R. G., & Oakley, L. D. (1996). Rapid improvement in the defense style of depressed women and men. *Journal of Nervous and Mental Disease*, 184, 358-361.
- Lamp-de Groot, J. (1957). On defense and development: Normal and pathological. *Psychoanalytic Study of the Child*, 12, 114-126.
- Lichtenberg, J. D., & Slap, J. W. (1972). On the defense mechanism: A survey and synthesis. *Journal of the American Psychoanalytic Association*, 20, 776-792.
- Lobel, T. E., & Winch, G. L. (1986). Different defense mechanisms among men with different sex role orientations. *Sex Roles*, 15, 215-220.
- Loewenstein, R. M. (1967). Defensive organization and autonomous ego functions. *Journal of the American Psychoanalytic Association*, 15, 795-809.

- MacGregor, M. W., Davidson, K., Barksdale, C., Black, S., & MacLean, D. (2003). Adaptive defense use and resting blood pressure in a population-based sample. *Journal of Psychosomatic Research, 55*, 531-541.
- Malone, J. C., Cohen, S., Liu, S. R., Vaillant, G. E., & Waldinger, R. J. (2013). Adaptive midlife defense mechanisms and late-life health. *Personality and Individual Differences, 55*(2), 85-89.
- McCrae, R. R. (1984). Situational determinants of coping responses, loss, threat, and challenge. *Journal of Personality and Social Psychology, 46*, 919-928.
- Mullen, L. S., Blanco, C., Vaughn, S. C., & Roose, S. P. (1999). Defense mechanisms and personality in depression. *Depression and Anxiety, 10*, 168-174.
- Newman, L. S., Duff, K. J., & Baumeister, R. F. (1997). A new look at defensive projection: Thought suppression, accessibility, and biased person perception. *Journal of Personality and Social Psychology, 72*, 980-1001.
- Obrist, P. A. (1981). *Cardiovascular psychophysiology: A perspective*. New York: Plenum Press.
- Oettingen, G. (1996). Positive fantasy and motivation. In P. M. Gollwitzer & J. A. Bargh (Eds.), *The psychology of action: Linking cognition and motivation to behavior* (pp. 236-259). New York: Guilford.
- Pennebaker, J. W. (1993). Putting stress into words: Health, linguistic, and therapeutic implications. *Behaviour Research and Therapy, 31*, 539-548.
- Pennebaker, J. W., & Chew, C. H. (1985). Behavioral inhibition and electrodermal activity during deception. *Journal of Personality and Social Psychology, 49*, 1427-1433.
- Perry, J. C., Beck, S. M., Constantinides, P., & Foley, J. E. (2009). Studying change in defensive functioning in psychotherapy using the defense mechanism rating scales: Four hypotheses, four cases. In R. A. Levy & J. S. Ablon (Eds.), *Handbook of evidence-based psychodynamic psychotherapy: Bridging the gap between science and practice* (pp. 121-153). New York: Humana Press.
- Perry, J. C., & Hoglend, P. (1998). Convergent and discriminant validity of overall defensive functioning. *Journal of Nervous and Mental Disease, 186*, 529-535.
- Perry, J. C., Hoglend, P., Shear, K., Vaillant, G. E., Horowitz, M., Kardos, M. E., et al. (1998). Field trial of a diagnostic axis for defense mechanisms for DSM-IV. *Journal of Personality Disorders, 12*, 56-68.
- Porcerelli, J. H., Abramsky, M. F., Hibbard, S., & Kamoo, R. (2001). Object relations and defense mechanisms of a psychopathic serial sexual homicide perpetrator: A TAT analysis. *Journal of Personality Assessment, 77*, 87-104.
- Porcerelli, J. H., Cogan, R., Kamoo, R., & Leitman, S. (2004). Defense mechanisms and self-reported violence toward partners and strangers. *Journal of Personality Assessment, 82*, 317-320.
- Porcerelli, J. H., Cogan, R., Markova, T., Miller, K., & Mickens, L. (2011). The *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition* Defensive Functioning Scale (DFS): A validity study. *Comprehensive Psychiatry, 52*, 225-230.
- Porcerelli, J. H., Thomas, S., Hibbard, S., & Cogan, R. (1998). Defense mechanisms development in children, adolescents, and late adolescents. *Journal of Personality Assessment, 71*, 411-420.
- Presniak, M. D., Olson, T. R., & MacGregor, M. W. (2010). The role of defense mechanisms in borderline and antisocial personalities. *Journal of Personality Assessment, 92*, 137-145.

- Romans, S. E., Martin, J. L., Morris, E., & Herbison, G. P. (1999). Psychological defense styles in women who report childhood sexual abuse: A controlled community study. *American Journal of Psychiatry*, *156*, 1080-1085.
- Sammallahti, P., & Aalberg, V. (1995). Defense style in personality disorders: An empirical study. *Journal of Nervous and Mental Disease*, *183*, 516-521.
- Sandstrom, M., & Cramer, P. (2003). Girls' use of defense mechanisms following peer rejection. *Journal of Personality*, *71*, 605-627.
- Schimel, J., Greenberg, J., & Martens, A. (2003). Evidence that projection of a feared trait can serve a defensive function. *Personality and Social Psychology Bulletin*, *29*, 969-979.
- Schwebel, D. C., & Suls, J. (1999). Cardiovascular reactivity and neuroticism: Results from a laboratory and controlled ambulatory stress protocol. *Journal of Personality*, *67*, 67-92.
- Segal, D. L., Coolidge, F. L., & Mizuno, H. (2007). Defense mechanism differences between younger and older adults: A cross-sectional investigation. *Aging and Mental Health*, *11*, 415-422.
- Siefert, C. J., Hilsenroth, M. J., Weinberger, J., Blagys, M. D., & Ackerman, S. J. (2006). The relationship of patient defensive functioning and alliance with therapist technique during short-term psychodynamic psychotherapy. *Clinical Psychology and Psychotherapy*, *13*, 20-33.
- Simeon, D., Guralnik, O., Knutelska, M., & Schmeidler, J. (2002). Personality factors associated with dissociation: Temperament, defenses, and cognitive schemata. *American Journal of Psychiatry*, *159*, 489-491.
- Sinha, B. K., & Watson, D. C. (1999). Predicting personality disorder traits with the Defense Style Questionnaire (DSQ) in a normal sample. *Journal of Personality Disorders*, *13*, 281-286.
- Step toe, A., & Voge le, C. (1992). Individual differences in the perception of bodily sensations: The role of trait anxiety and coping style. *Behavior Research and Therapy*, *30*, 597-607.
- Vaillant, G. E. (1971). Theoretical hierarchy of adaptive ego mechanisms. *Archives of General Psychiatry*, *24*, 107-118.
- Vaillant, G. E. (1976). Natural history of male psychological health: III. The relation of choice of ego mechanisms of defense to adult adjustment. *Archives of General Psychology*, *33*, 535-545.
- Vaillant, G. E. (1977). *Adaptation to life*. Boston: Little, Brown.
- Vaillant, G. E. (1983). Childhood environment and maturity of defense mechanisms. In D. Magnusson & V. L. Allen (Eds.), *Human development: An interactional perspective* (pp. 343-352). New York: Academic Press.
- Vaillant, G. E. (1992). *Ego mechanisms of defense: A guide for clinicians and researchers*. Washington, DC: American Psychiatric Press.
- Vaillant, G. E. (1993). *The wisdom of the ego*. Cambridge, MA: Harvard University Press.
- Vaillant, G. E. (1994). Ego mechanisms of defense and personality psychopathology. *Journal of Abnormal Psychology*, *103*, 44-50.
- Vaillant, G. E., & McCullogh, L. (1998). The role of ego mechanisms of defense in the diagnosis of personality disorders. In J. W. Barren (Ed.), *Making diagnosis meaningful: Enhancing evaluation and treatment of psychological disorders* (pp. 161-195). Washington, DC: American Psychological Association.

- Vaillant, G. E., Shapiro, L. N., & Schmitt, P. P. (1970). Psychological motives for medical hospitalization. *Journal of the American Medical Association*, *214*, 1661-1665.
- van der Leeuw, P. J. (1971). On the development of the concept of defense. *International Journal of Psychoanalysis*, *52*, 51-58.
- von Korff, M., Shapiro, S., Burke, J. D., Teitlebaum, M., Skinner, E. A., German, P., et al. (1987). Anxiety and depression in a primary care clinic. *Archives of General Psychiatry*, *44*, 152-156.
- Wallerstein, R. S. (1967). Development and metapsychology of the defense organization of the ego. *Journal of the American Psychoanalytic Association*, *15*, 130-149.
- Wallerstein, R. S. (1985). Defenses, defense mechanisms, and the structure of the mind. In H. P. Blum (Ed.), *Defense and resistance* (pp. 201-225). New York: International Universities Press.
- Watson, D. C. (2002). Predicting psychiatric symptomatology with the Defense Style Questionnaire-40 (DSQ-40). *International Journal of Stress Management*, *9*, 275-287.
- Watson, D. C., & Hubbard, B. (1996). Adaptational style and dispositional structure: Coping in the context of the five-factor model. *Journal of Personality*, *64*, 737-774.
- Wertheimer, J. (1983). The mechanisms of permanence: Time: Support for a psychodynamic hypothesis of psychological aging. *Journal of Geriatric Psychiatry*, *16*, 245-255.
- Whiteman, M. (1967). Children's conceptions of psychological causality. *Child Development*, *38*, 143-156.
- Whitty, M. T. (2003). Coping and defending: Age differences in maturity of defense and coping strategies. *Aging and Mental Health*, *7*, 123-132.
- Wilkinson, W. W., & Ritchie, T. D. (2015). The dimensionality of defense-mechanism parcels in the Defense Style Questionnaire-40 (DSQ-40). *Psychological Assessment*, *15*, 1-6.
- Winston, B., Winston, A., Samstage, L. W., & Muran, J. C. (1994). Patient defense/therapist intervention. *Psychotherapy*, *31*, 478-660.
- Xiang, J.-J., & Shen, H.-Y. (2010). Defense mechanisms in college students with borderline personality disorder. *Chinese Mental Health Journal*, *24*, 275-278.
- Yu, T., Chamorro-Premuzic, T., & Honjo, S. (2008). Personality and defense mechanisms in late adulthood. *Journal of Aging and Health*, *20*, 526-544.

Department of Psychology
 Williams College
 18 Hoxsey Street
 Williamstown, MA 01267
 phebe.cramer@williams.edu