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**EGO MECHANISMS OF DEFENSE REVISITED:
THE RELATION OF DEFENSE PROFILES TO PERSONALITY AND HEALTH**

by

Michael William MacGregor

Submitted in partial fulfillment of the requirements
for the degree of Doctor of Philosophy

at

Dalhousie University

Halifax, Nova Scotia

September 2000

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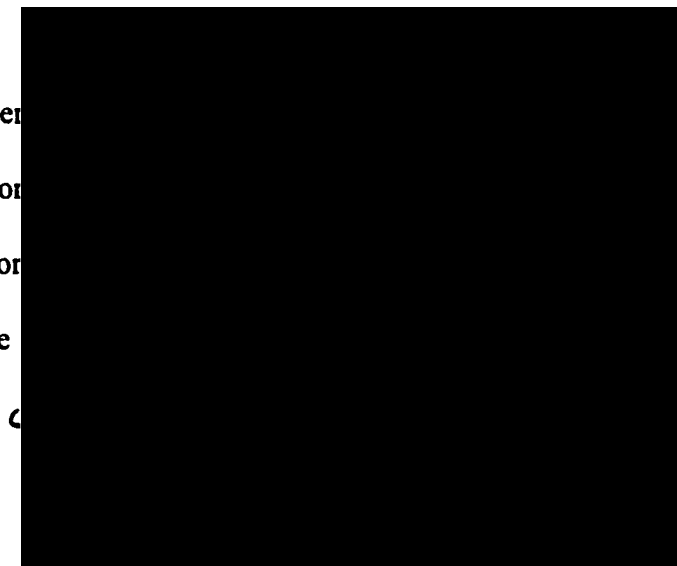
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External Examiner
Research Supervisor
In-House Advisor
Examining Committee



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AUTHOR: *Michael Wm. MacGregor*

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ABSTRACT

One of Freud's most important contributions to psychology is the concept of defense mechanisms. Despite the importance of this concept, however, there are a number of theoretical and empirical difficulties that have hampered the investigation of defenses. I present two studies relating to the empirical investigation of defenses and demonstrate how psychodynamic constructs can be reliably and validly assessed. In study one, I use the Defense-Q (Davidson & MacGregor, 1996; MacGregor & Davidson, 1998) to empirically test the cross-sectional relation between adaptive defense use and resting blood pressure. Using a population-based sample stratified on age and gender, I test if adaptive defense use has a larger impact on resting blood pressure in older compared to younger persons. Results suggest that adaptive defense use may play a protective role in women but not in men in terms of the development of high blood pressure in later life. In study two, I again use the Defense-Q to empirically test the prospective relation between adaptive defense use and physician health care costs. Using the same population-based sample as in study one, I test if adaptive defense use is related to lower physician health care costs over a three-month period. Results suggest that adaptive defense use is related to decreased physician health care costs even when controlling for medical and psychiatric diagnoses. Results from these two studies suggest that the Defense-Q is both a reliable and valid instrument to assess defenses and that defense use is related to blood pressure and health care costs in theoretically meaningful ways. These results demonstrate that psychodynamic constructs can be empirically investigated and do contribute to our understanding of personality and health.

LIST OF ABBREVIATIONS

<	Less Than
>	Greater Than
=	Equal to
%	Percent
ADP	Adaptive Defense Profile
APA	American Psychiatric Association
b	Unstandardized Beta Weight
<u>B</u>	Standardized Beta Weight
cf	<i>Confer</i>
DBP	Diastolic Blood Pressure
DMI	Defense Mechanism Inventory
DMRS	Defense Mechanism Rating Scale
DSM-III	Diagnostic and Statistical Manual of Mental Disorders, Third Edition
DSM-III-R	Diagnostic and Statistical Manual of Mental Disorders, Third Edition, Revised
DSM-IV	Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition
DSQ	Defense Style Questionnaire
Ed.	Editor
Eds.	Editors
e.g.	<i>Exempli gratia</i>
ESI	Expanded Structured Interview
et al.	<i>Et Alii</i>
F	F test
i.e.	<i>Id est</i>
<u>M</u>	Mean
MCIS	Medical Conditions Impact Scale
MODS	Maturity of Defense Scale
ms	Milliseconds

N	Sample Size
NSHS95	Nova Scotia Health Survey 1995
p	Probability
p.	Page
Ph.D.	Doctor of Philosophy
pp.	Pages
R	Pearson Correlation
R ²	Proportion of Variance
PRN	Principalization
PRO	Projection
REV	Reversal
<u>SE B</u>	Standard Error of the Unstandardized Beta Weight
SBP	Systolic Blood Pressure
t	t Test
TAO	Turning Against Object
TAS	Turning Against Self
Vol.	Volume

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CHAPTER ONE: GENERAL INTRODUCTION

Ego Mechanisms of Defense Revisited:

The Relation of Defense Profiles to Personality and Health

The impact Sigmund Freud has on psychology is evident in the fact that his ideas and beliefs are still hotly debated among clinicians and academics alike (Norem, 1998). Sigmund Freud's thinking influences our understanding of human behavior (Cooper, 1990) and forms the foundation of many psychological theories and empirical investigations (e.g. Cramer, 1991; Ihlevich & Gleser, 1986; Vaillant, 1977, 1994). Sigmund Freud's theories, however, have not been universally accepted and have often been labeled untestable or unscientific (Horgan, 1996). It is the purpose of this dissertation to demonstrate the testability and importance of one psychoanalytic construct: Defense mechanisms¹.

In this general introduction I will first briefly describe the concept of defenses. This will include the definitional criteria and the function of defense, and will provide the reader with a better understanding of the some of the properties of defenses (e.g., conscious versus unconscious). Next, to provide the reader with an overview, a brief discussion of the historical origin of defenses will be presented. This will provide the foundation for a discussion of the difficulties surrounding the assessment of defenses. These difficulties include the method by which to assess defenses (e.g., laboratory, self-report, and observational), the definitions of defenses to be used, appropriate validity criteria, and the testing of hypotheses about defenses. Hypotheses and empirical evidence for defenses and physical health outcomes will be presented next. Finally, the Defense-Q, a new observer-based instrument to assess defenses, will be presented along with its reliability and validity. I intend to demonstrate that the Defense-Q is a reliable, valid, and easy-to-use observational instrument designed to assess defenses. It is this instrument that I will use to test hypotheses about defenses and health outcomes.

The Concept of Defenses: Definitional Criteria and Function

One of the most lasting and important contributions that Sigmund Freud made to the science of psychology was the concept of defenses (Vaillant, 1992). Sigmund Freud's theories of defenses developed over many years and gradually came to dominate his

theories of defenses developed over many years and gradually came to dominate his writings. In 1894/1962, in The Neuro-Psychoses of Defense, Sigmund Freud proposed how defenses work:

the ego rejects ... [an] unbearable idea together with its associated affect and behaves as if the idea had never occurred to the person at all. But, as soon as this process ... become[s] successfully carried through, the person in question ... develop[s] a psychosis [neurosis], and his state can only be described as one of 'hallucinatory confusion' (S. Freud, 1894/1962, pp., 72-73).

Sigmund Freud saw defenses as mechanisms by which the ego was able to defend against unbearable affect. Since defenses were working at an unconscious level, and changed conscious reality, Sigmund Freud likened the process to confusion. It is from this initial definition of how defenses work that our current conceptualization has been derived.

A recent issue of the Journal of Personality (1998) sets forth the status of defense research and provides us with the definitional criteria of defenses (Cramer, 1998; Davidson & MacGregor, 1998). The first definitional criterion for defenses is that they are unconscious. That is, a defense is defined as a mental or cognitive operation that functions outside of awareness. Any operation that involves conscious processing (e.g., thinking about going to the gymnasium to work out and reduce your stress) is by definition not defensive. The operation must be unconscious and reflexive. This first criterion is important as writers have often confused unconscious defenses with conscious coping. As well, writers have often used the term defense to refer to both the process of responding to threatening situations and to the specific strategies or mechanisms used when responding to the threatening situation. As such, it is important to distinguish between unconscious and conscious operations (e.g., see Cramer, 1998 for a discussion of coping and defending). The second definitional criterion is that defenses protect against psychic threat. That is, defenses operate to keep unacceptable thoughts, impulses, and wishes out of awareness to protect self-esteem and the integration of the self. A perceived psychic threat (either originating internally or externally) must be present for the resulting behavior to qualify as defensive. The third definitional criterion for defenses is that they must manage affect. The function of a defense is to protect a person

from experiencing excessive anxiety or aversive affect. For a defense to operate, there must first be a threat, and the threat must result in aversive affect. The defense defends against the threat, and therefore the aversive affect is avoided or reduced. The fourth definitional criterion for defenses is that they must be stable. Defenses are defined currently as part of normal personality and are therefore enduring, stable, and predictable. While defenses may be situationally triggered, the defenses that are used to defend against the anxiety or aversive affect are stable dispositional characteristics of the person (although like other personality traits, they may mature or change over the life-span). The fifth definitional criterion of defenses is adaptation. Defenses are not in and of themselves maladaptive. All people have the potential to use defenses to defend against anxiety or aversive affect in a healthy and adaptive manner. Defenses can, however, become maladaptive. Defenses can be viewed as maladaptive if they are used excessively and rigidly, if they are developmentally inappropriate, if they are destructive to the self, or if they negatively impact upon personal, interpersonal, or work behavior. The sixth and final definitional criterion for defenses is that they are distinctive. Defenses are unique and distinguishable from each other, and it is the relative use of unique defenses that contributes towards the perception of overall adaptiveness or maladaptiveness of their use. Thus, as both Sigmund Freud and Anna Freud distinguished between defenses and their relative use to each other within a person, it is important to consider a wide range of defenses when conducting assessment. It is from these six definitional criteria that the properties and functions of defenses have been conceptualized.

The six definitional criteria for defenses listed in the special issue of Journal of Personality correspond very closely to the criteria that Sigmund Freud developed over his life (Vaillant, 1986). Sigmund Freud saw defenses as being unconscious, in response to a psychic threat, and the primary means by which the ego managed affect and instinct (the first three criteria listed in the Journal of Personality). Although Sigmund Freud did not directly discuss the stability of defenses, his writings implied that defenses were stable and formed both normal and abnormal personality (the fourth criterion listed in the

Journal of Personality). Finally, Sigmund Freud considered defenses to be both adaptive and maladaptive and to be distinct from one another (the fifth and six definitional criteria listed in the Journal of Personality). Thus, our current conceptualization of defenses is similar to that developed by Sigmund Freud.

Sigmund Freud developed his theory of defenses over his life, and by the time of his death in 1939 he had identified many of the defenses of which we now speak (Vaillant, 1992). Anna Freud continued to identify and classify defenses, and the work of both of these writers forms the foundation from which our current understanding of defenses has developed. To better understand defenses, a brief summary of the historical origin of defenses is presented from the writings of Sigmund and Anna Freud.

Historical Origin of Defenses

In order to understand better the concept of defenses, and to gain a better understanding of the historical origin of defenses, I will review those defenses identified and described by Sigmund and Anna Freud. A list of these defenses along with definitions of how they are currently conceptualized can be found in table one. The sixteen defenses that are discussed have formed the foundation of both theoretical and empirical research and represent those defenses more commonly identified and accepted among researchers.

Repression is the unconscious banishment from awareness of all conflict-producing wishes, thoughts, feelings, or experiences. Repression can be considered the cornerstone of defense, and of all defenses. In his early writings, Sigmund Freud did not distinguish between Repression and other defenses. As he developed his theory of the importance of defenses to the dynamics of personality, however, he began to distinguish Repression from other defenses. Although Sigmund Freud was not the first to write about Repression, his conceptualization of Repression greatly expanded our understanding of this concept. Sigmund Freud changed how we conceptualize Repression in terms of overall personality structure and in terms of the function we ascribe to it. While other writers (e.g., Schopenhauer, as cited in Vaillant, 1992) recognized that Repression banishes ideas from awareness, it was Sigmund Freud who

identified that Repression banishes not only ideas but affect as well. In his Neuro-Psychoses of Defense (1894/1962), Sigmund Freud writes that Repression banishes threatening ideas from awareness and leaves the affect associated with the idea in a state that is non-threatening.

The affect ... remains as it was before [it was intrapsychically threatening], unaltered and undiminished, the only difference being that the incompatible idea is kept down and shut out from recollection. (S. Freud, 1894/1962, pp. 54-55).

Thus, according to Sigmund Freud the idea is banished from awareness, and the threatening affect returns to a pre-threatening level.

In the same year that Sigmund Freud was writing about Repression (1894/1962), he was also writing about Isolation. In fact, Sigmund Freud identified Isolation as the opposite of Repression. Isolation is unconscious separation of ideas and affect with the retention of the idea but not the affect. That is, a person who uses Isolation is able to remember details of an event but not the affect associated with the event. Whereas Repression banished the idea and the affect, Isolation banishes the affect and keeps the idea in a diluted form. In the Neuro-Psychoses of Defense (1894/1962), Sigmund Freud writes that

If someone with a disposition lacks the aptitude for conversion, but if, nevertheless, in order to fend off an incompatible idea, he sets about separating it from its affect, then that affect is obliged to remain in the psychical sphere. The idea, now weakened, is still left in consciousness separated from all association. (S. Freud 1894/1962, pp. 51-52).

Although Sigmund Freud originally conceptualized Isolation in terms of conversion, the principle that ideas are retained and affect is lost is still the hallmark of Isolation.

Dissociation is the unconscious breakdown of the integration of the self and the environment when faced with threatening conflicts. That is, faced with a threatening situation, a person who uses Dissociation loses all sense of himself and subsequently, there is no conscious memory or perception of the self or the environment. In his writings on Some Points for a Comparative Study of Organic and Hysterical Motor Paralysis

(1893/1966), Sigmund Freud defined Dissociation as a defense against affect that results in a loss of the self (manifested in terms of paralysis).

...[in every case of hysterical paralysis, we find] that the paralyzed organ or the lost function is involved in a subconscious association which is provided with a large quota of affect and it can be shown that the arm is liberated as soon as this quota is wiped out. (S. Freud. 1893/1966, p. 171).

Thus, the hysterical patient dissociates from both himself and from his environment and is not able to recall the situation that led to the paralysis or the current environment, which thus demonstrates the psychological nature of hysterical paralysis. Janet (as cited in Vaillant, 1977) further developed our understanding of Dissociation by conceptualizing it not simply in terms of hysteria, but generalizing its use and manifestations beyond hysterical neuroses to other forms of pathology and life events (e.g., dissociation during a rape or dissociation during periods of stress).

Displacement is the unconscious redirection of feelings and responses associated with a threatening conflict to an object that is a less threatening substitute object. Sigmund Freud first wrote about Displacement in 1894/1962 in reference to affect which can be "dislodged" or "disposed" (S. Freud, 1894/1962, p. 54). It was his writings on phobias, again in the Neuro-Psychoses of Defense (1894/1962), however, that clarified the concept of Displacement. Sigmund Freud wrote that

...liberated anxiety, whose sexual origin must not be remembered by the patient, will seize upon the common primary phobias of mankind, about animals, thunderstorms, darkness and so on ... (S. Freud, 1894/1962, p. 54).

For Sigmund Freud, Displacement was primarily seen in relation to psychosexual development. Sexual anxiety was displaced onto other less threatening objects. As such, fear of masturbation, for example, may be displaced onto fear of thunderstorms. Although our current conceptualization of Displacement is not as closely tied to psychosexual development, Sigmund Freud's idea that anxiety can be displaced onto less threatening objects forms the foundation for the current understanding of Displacement.

Denial can be conceptualized of as either neurotic or psychotic. Neurotic Denial is the unconscious refusal to acknowledge some aspect of external or internal reality

associated with conflict. Psychotic Denial is similar to Neurotic Denial except that there is gross impairment of reality testing in Psychotic Denial. When Sigmund Freud first wrote about Denial in his Psycho-Neuroses of Defense (1894/1962), he wrote about Psychotic Denial. Sigmund Freud described a young girl in love with a man who did not return her love. Although Sigmund Freud did not use the word Denial he described the process of Denial as it was working in the girl's hallucinations.

In a state of great tension, she awaited his arrival ... When all the trains by which he could arrive had come and gone, she passed into a state of hallucinatory confusion; he had arrived, she heard his voice in the garden, she hurried down in her nightdress to receive him. From that time on she lived for two months in a happy dream, whose content was that he was there, always at her side... (S. Freud, 1894/1962, pp. 58-59).

In this example then, the girl denies that the man has not arrived, and she hears his voice in her garden. She has used Psychotic Denial to deal with her unrequited love. By 1924 Sigmund Freud had introduced the term denial of external reality, and it is from that term that the modern term of Psychotic Denial was developed (Vaillant, 1992).

Anna Freud (1966) greatly expanded on her father's description of Denial. In two chapters entitled "Denial in Fantasy" and "Denial in Word and Act" she provided conceptualizations of both Neurotic and Psychotic Denial, although like her father's conceptualization, they were primarily thought to operate in relation to sexual instincts. For example, Anna Freud recounts the analysis of Little Hans, whose neurosis (according to Sigmund Freud) was the result of castration anxieties. She writes that Hans denied reality by means of his fantasy and escaped from his fear of castration by denying the reality of his father's power. "The child's ego refuses to become aware of ... reality ... and turns [his] back on [reality] and denies it" (A. Freud, 1966, pp. 79-80). With these two chapters, Anna Freud provided our current conceptualizations of both Neurotic and Psychotic Denial.

In 1895/1966 Sigmund Freud began to develop the concept of Projection in his letters to Wilhelm Fliess. In those letters Sigmund Freud indicated that the "purpose of paranoia is thus to fend off an idea that is incompatible with the ego, by projecting its substance into the external world" (S. Freud, 1895/1966, p. 209). Our current

understanding of Projection is quite similar to this early conceptualization provided by Sigmund Freud. Projection is unconscious attribution of unacceptable feelings or ideas to others. In 1896/1966, Sigmund Freud further elaborated on Projection by stating that

... in paranoia, the self-reproach is repressed in a manner which may be described as projection. It is repressed by erecting the defensive symptom of distrust of other people. In this way the subject withdraws his acknowledgement of the self-reproach (S. Freud, 1896/1966, p. 184).

Our current definition of Projection fits Sigmund Freud's understanding of Projection, although it has been expanded beyond the realm of paranoia. That is, self attributes or ideas that are deemed threatening are unconsciously and falsely attributed to others.

Sublimation is the unconscious channeling of unacceptable ideas or wishes into socially acceptable behaviors. In his letters to Wilhelm Fliess (1897/1966), Sigmund Freud first used the term Sublimation to describe the fantasies of hysterics. In 1905/1953, however, he further extended the concept of Sublimation beyond hysterics and presented how Sublimation is used in cases of sexual curiosity.

[Sublimation] ... enables excessively strong excitation arising from particular sources of sexuality to find an outlet and use in other fields ... [and] the perverse sexual disposition of childhood can accordingly be regarded as the source of a number of our virtues. (S. Freud, 1905/1953, pp. 238-239).

According to this, Sigmund Freud saw sexual excitation being sublimated into more productive activities such as painting, drawing, sculpting, etc. (i.e., virtues). Again, while our current conceptualization goes beyond sexuality, the basic premise of Sublimation remains the same.

Sigmund Freud originally conceptualized Fantasy as a defense only in the context of dreams. By 1901/1960, however, Sigmund Freud had modified his thinking on fantasy to include both waking and sleeping states (S. Freud, 1901/1960, p. 172). Fantasy is the temporary substitution of internal reality (e.g., daydreaming) for external reality to deal with threatening ideas or affect. Sigmund Freud described a case example of a man with a waking fantasy of marriage to his physician's daughter, but who in reality had no relations with women and who had an extreme dislike of marriage and love-relationships.

Thus, by 1901/1960 Sigmund Freud had conceived that Fantasy could allow an imagined object to substitute fully for a real one both in and out of sleep.

Reaction Formation is the unconscious substitution of opposite thoughts, feelings, or behaviors for those that are intrapsychically threatening. In his Three Essays on the Theory of Sexuality (1905/1953), Sigmund Freud first described Reaction Formation.

Sigmund Freud described Reaction Formation as

begin[ing] during a child's period of latency and continu[ing] in favorable cases throughout his whole life ... The multifariously perverse sexual disposition of childhood can accordingly be regarded as the source of a number of our virtues, in so far as through reaction formation it stimulates their development. (S. Freud, 1905/1953, pp. 238-239).

Again, Sigmund Freud saw Reaction Formation primarily operating in terms of psychosexual development, changing sexual impulses into opposites (e.g., hate and fear of father during the Oedipal stage to love of the father). Our current conceptualization moves the defense of Reaction Formation beyond psychosexual stages but retains the premise that opposite ideas, behaviors, or affects are unconsciously adopted.

Humor defends against conflict by unconsciously taking aspects of what is threatening and treating those aspects in a humorous or ironic way. In Jokes and Their Relation to the Unconscious, Sigmund Freud discussed the defense of Humor. He conceptualized Humor as a "means of obtaining pleasure in spite of the distressing affects that interfere with it. [that is] it acts as a substitute for the generation of these affects" (S. Freud, 1905/1960, pp. 228-229). This is almost identical to our current conceptualization of Humor as a defense.

In Turning Against the Self, the intrapsychic conflict is unconsciously turned inward to blame or devalue the self. Sigmund Freud conceptualized Turning Against Self as a defense against aggression. In 1905/1953 Sigmund Freud wrote

[it] may be doubted at first whether it [masochism] can ever occur as a primary phenomenon or whether, on the contrary, it may not invariably arise from a transformation of sadism...turned round upon the subject's own self, which thus, to begin with, takes the place of the sexual object. (S. Freud, 1905/1953, p. 158).

Although we have expanded our conceptualization of Turning Against the Self from simply dealing with aggression, the idea that a person who uses Turning Against the Self blames and devalues himself is the cornerstone of our modern definition of this defense.

Undoing is the unconscious repetition of an action to symbolically make amends for a threatening conflict. The defense of Undoing provides a means to reverse hostile wishes. In his case study of the Rat Man, Sigmund Freud first used the term Undoing to describe the reversal of the Rat Man's aggressive desires. Sigmund Freud suggested that the Rat Man's extension of his obsessional fears to include events in the next world

... was nothing else than a compensation for these death-wishes which he had felt against his father ... it was designed -- in defiance of reality, and in deference to that which had been previously showing itself in fantasies of every kind -- to undo the fact of his father's death (S. Freud, 1909/1955, pp. 235-236).

In this example the Rat Man's fears in the real world were symbolic behaviors (obsessional worries) about his father's death.

In 1915/1957, building on his previous writings regarding Turning Against the Self, Sigmund Freud discussed the concept of Passive-Aggression. Although at times Sigmund Freud is unclear as to how Turning Against the Self and Passive-Aggression are unique defenses, his writings lay the foundations for our current understanding of these two defenses. Sigmund Freud identified masochism as hostility passively turned around upon the subject. He states that "the earlier active direction of the instinct persists to some degree side by side with its later passive direction, even when the process of its transformation has been very extensive" (S. Freud 1915/1957, p. 130). Thus, Sigmund Freud saw masochism as a passive, less threatening, and less direct manifestation of hostility directed towards the self (if the instinct was not passive the person would actively kill himself).

Vaillant has further identified and defined Passive-Aggression in relation to the longitudinal study of Harvard men known as the Grant Study (Vaillant, 1977). Vaillant discussed Passive-Aggression in terms of cases in the Grant Study.

... the long suffering child, to punish his parents may run away from home with inadequate clothing. The rejected lover may cut her wrists because her boyfriend cannot stand the sight of blood. (Vaillant, 1977, p. 186).

In each of these examples, the instigator is not really intending to hurt him or her self but instead to hurt another person. Rather than directly addressing the source of anxiety the instigator indirectly punishes the person causing the anxiety. For example, running away from home without proper clothing results in the child becoming sick and his parents having to take time to care for him and paying more attention to him (his original goal) so he will not run away again. And by slitting her wrists (without really meaning to kill herself) the woman punishes her boyfriend and draws his attention back to her and increases his care taking (her original goal). In both these examples then, the person passively aggresses against the threatening person in a non-direct manner. This concept is consistent with our current understanding of Passive Aggression.

Altruism is the helping of others to meet the same needs that are unconsciously being unmet in the person. In his Introductory Lectures on Psycho-Analysis (1916-1917/1963), Sigmund Freud discussed the defensive, yet healthy, nature of Altruism (Pseudoaltruism).

The opposite to egoism, altruism ... is distinguished from it by the absence of longings for sexual satisfaction. When someone is completely in love, however, altruism converges with libidinal object-cathexis. As a rule the sexual object attracts a portion of the ego's narcissism to itself, and this becomes noticeable as what is known as the 'sexual overvaluation' of the object. (S. Freud, 1916-1917/1963, p. 418).

This discussion by Sigmund Freud points out the healthy aspect of Altruism in terms of transferring primitive self-narcissism from the self to another so other love can take place. Anna Freud took this concept of Altruism and moved it beyond sexuality to provide our current conceptualization of Altruism.

The surrender of one's own wishes to another person and the attempt to secure their fulfillment thus vicariously are, indeed to the interest and pleasure with one watches a game in which one has no stake oneself ... On the other hand it enables the subject to take a friendly interest in the gratification of other people's instincts and so, indirectly and in spite of the superego's prohibition, to gratify his own. (S. Freud, 1966, p. 129).

Splitting is the unconscious compartmentalizing of affective states into all-good or all-bad and the inability to integrate these opposites. Sigmund Freud did not identify or write about Splitting until later in his life (S. Freud, 1940/1964). Despite current conceptualizations of Splitting in relation to conflicting objects or self-representations (e.g., I love my boyfriend, I hate my boyfriend), Sigmund Freud saw Splitting in terms of the conflict between instinct and reality.

...there is a conflict between the demand by the instinct and the prohibition by reality. But in fact the child takes neither course, or rather he takes both simultaneously ... he replies to the conflict with two contrary reactions, both of which are valid and effective ... the instinct is allowed to retain its satisfaction and proper respect is shown to reality. (S. Freud, 1940/1964, p. 275).

The current understanding of Splitting has been greatly assisted by Kernberg (1967). Kernberg has conceptualized Splitting as a failure of the ego to integrate introjects and identifications

...Introjects and identifications established under the influence of libidinal drive derivatives are at first built up separately ... this division of internalized object relations into good and bad happens at first simply because of the lack of the integrative capacity of the early ego ... later on what originally was a lack of integrative capacity is used defensively ... to prevent the generalization of anxiety. (Kernberg, 1967, p. 25).

Kernberg took Sigmund Freud's original conceptualization of Splitting and expanded it beyond instinct theory into object relations theory.

Sigmund and Anna Freud did not provide a definitive list of all defenses, but they did lay the foundation for much of our current understanding of many defenses. While even today there is no definitive list of defenses (see Definitions, Validity, and Hypothesis Testing below), there are a number of instruments available to assess commonly accepted defenses. It is to the current assessment of defenses that I now turn.

Difficulties Facing Defense Assessment

Methods to Assess Defenses

One of the problems facing those interested in conducting research on defenses is the method by which to conduct the assessment. There are three typical methodologies that can be employed to assess defenses: Laboratory approaches, self-report, and observer-report. Laboratory approaches typically involve the investigation of a limited number of defenses under a highly controlled environment (Kragh, 1960). According to the theory underlying this approach, the activation of defenses in response to a current threat (anxiety) follows a sequence that repeats the course of normal defense development accompanying maturation (Cramer, 1991). One of the more frequently reported laboratory approaches to defense assessment is the Defense Mechanism Test (Kragh, 1960). The Defense Mechanism Test is thought to reveal pre-cognitive defensive organization through the tachistoscopic presentation of Thematic Apperception Test-like stimuli that involve a central character and a threatening secondary character. Participants are exposed to twelve different stimuli that are presented from 20 to 500 ms (each subsequent stimulus is exposed for a longer period of time). Participants are asked to draw what they see and provide a short written explanation (Kragh, 1960). Responses are scored for Denial, Turning Against the Self, Repression, Isolation, Reaction Formation, and Identification with the Aggressor. Cramer reports that coder reliability ranges from .70 to .81 (Cramer, 1991).

A second frequently reported laboratory approach to defense assessment is the meta-contrast technique (Kragh & Smith, 1970). Similar to the Defense Mechanism Test, stimuli are presented tachistoscopically at different time intervals. For each stimulus, participants are asked to describe everything they see during the exposure, and this process is repeated until the stimulus is completely correctly recognized. At this point, unknown to the participant, a second stimulus is superimposed upon the first and is presented at increasing length of exposure until each picture is correctly identified. For example, a child in a room looking out the window (stimulus one) is fused with a monster looking in where the window is (stimulus two). It is expected that during earlier, briefer exposures more primitive, childlike defenses will be elicited, whereas at later, longer exposures less primitive and more adult like defenses will be elicited.

Laboratory based assessments of defenses often assess a limited number of defenses, thereby limiting their clinical utility. As well, the scoring is time-consuming, and little information is available regarding their validity (Cramer, 1991). Perhaps most devastating, however, is the coder reliability of this approach. Cramer (1991) reports that the efficacy of such laboratory approaches depends largely on the skill and training of the individual administering the test, and that coder reliability has not been promising. Laboratory approaches to defense assessment are the least frequently used and the most dissimilar to materials that clinicians use to assess defenses. As Vaillant has suggested, laboratory approaches may be convenient and may even achieve reliability, however, the experimental control used often limits the relevance of the findings to real life (Vaillant, 1986). The controlled setting of the laboratory often fails to provide a way of understanding defenses in the real world. Due to the poor reliability and the dissimilarity between laboratory approaches to assessing defenses and defenses in real life, clinicians and researchers have generally relied on other methodologies with better reliability and closer proximity to real life to assess defenses.

Self-report is another frequently used method of assessing defenses. Two of the most frequently used self-report instruments available to researchers are the Defense Mechanism Inventory (DMI; Gleser & Ihilevich, 1969) and the Defense Style Questionnaire (DSQ; Bond, Gardner, Christian, & Seigal, 1983). The DMI assesses five theoretically distinct defensive styles: Turning Against the Self (TAS), Turning Against the Object (TAO; which consists of Identification with the Aggressor and Displacement), Projection (PRO), Reversal (REV; which includes Negation, Denial, Reaction Formation, and Repression), and Principalization (PRN; which includes Intellectualization, Isolation, and Rationalization). The DMI consists of 10 stories that are hypothesized to capture commonly encountered conflictual situations. There is a male and female version of the questionnaire. Each story is followed by five different options (corresponding to the five defense styles) for each of the following four categories: Actual behavior, impulsive fantasy, thoughts, and affect. The respondent is asked to select the option that is most

representative and least representative of him or her for each category. The DMI, although widely used, suffers from a number of limitations.

While the test-retest stability and internal consistency of the DMI are satisfactory (e.g., .78), the information available on validity is less satisfactory. Content validity is considered adequate for only three (TAS, REV, PRN) of the five styles as PRO and TAO are often classified as other styles, or are not considered to represent defensive behavior (Davidson & MacGregor, 1998). As well, factor analyses have demonstrated a lack of independence for PRO and TOA. Attempts to establish concurrent and construct validity have been limited by the non-independence of the scales, by conceptualization and theoretical problems associated with some of the DMI styles, and by the measures to which the DMI has been compared (Cramer, 1991; Ihilevich & Gleser, 1986). Rev is the only DMI scale to show consistently expected relations with the concurrent measures of similar constructs (Cramer, 1991); REV is consistently related to primitive defenses, repression, and avoidance. The validity that does exist for the DMI often employs other self-report instruments, and therefore does not consider alternative data sources or possible limitations associated with self-report measures. For example, the DMI has been validated against the MMPI, the MMPI-derived ego strength scale, the Crowne-Marlowe social desirability scale, and hostility and depression on the Symptom Checklist (Ihilevich & Gleser, 1986).

Another weakness of the DMI is how it relates to the definitional criteria for defenses. First, the consciousness of the defensive motivation is problematic for the DMI. Kline (1991) points out that defenses are to be used against unconscious threats, and yet the DMI explicitly describes the threats in each story, and explicitly describes the possible (defensive) actions that a person can take. Thus, by most definitions of defenses, the action selected and the behavior reported upon within the DMI is not defensive. Second, by definition, a psychic threat is necessary for defense activation to occur. The DMI approach does not consider the idiographic nature of psychic threat or conflict. In the current format, there is no way to ascertain that the conflict situation that is listed for respondents poses a psychic or even relevant threat for the respondent. Third,

it is difficult to measure anxiety and anxiety reduction after defense activation for all self-report measures, yet one has to ask whether some of the situations specified in the DMI would arouse threatening anxiety levels in the average respondent (such as threatening levels of anxiety after having been splashed). Fourth, the stability of the DMI defense styles has been examined across a number of weeks and appears to be stable. This is important since defenses are thought to be relatively stable personality characteristics. There have been no longer-term stability studies (e.g., one month, six months) conducted using the DMI, however, to examine if responses are enduring and consistent across longer periods of time. Fifth, the DMI appears to allow a range of both adaptive and maladaptive defensive behaviors, and so appears to cover the full range of adaptation and meets this criterion. Last, the DMI may not meet the definitional criteria of defense style distinctiveness, as there are large inter-defense style correlations (e.g., $r = .88$ between TAO and PRO; Cramer, 1991).

The Defense Style Questionnaire is the second most frequently used self-report instrument to assess defenses. In the development of the DSQ, Bond et al. (1983) originally attempted to assess 24 defenses that were taken from the works of Anna Freud (1966): Sigmund Freud (1926/1962, 1926/1950); Kernberg (1967) and Kline (1973). However, second-order factor analyses and low item-consistency estimates led to a scoring system of four defense styles (at the time labeled Defense Style 1 to 4) rather than scoring for individual defenses, computed from 81 items answered on a nine-point Likert scale. In 1986 Bond revised the DSQ to 88 items but retained a four factor solution, now calling the factors maladaptive action patterns, image-distorting defenses, self-sacrificing defenses, and adaptive defenses (Bond & Vaillant, 1986). As with the old version, each question is answered on a nine-point Likert scale. The DSQ has good test-retest reliability. Item consistency for the scores ranges from .68 to .86, and the stability of scores ranges from .68 to .73 over time. These results indicate that the factors are internally consistent and stable over time. The DSQ has some concurrent and construct validity, but its predictive validity is unknown. The DSQ, like the DMI, also has some limitations associated with the definitional criteria for defenses.

Bond and others (1983) decided that self-report methodology was not appropriate to assess distinct unconscious defenses, but it was suitable to assess the conscious derivatives of defenses and styles of defenses (Bond, 1995). Similar to all other self-report measures, however, awareness of motivation is not assessed by the DSQ, nor is psychic threat activation, nor anxiety avoidance/reduction, the first three definitional criteria of defenses. Further examination of the enduringness of these responses would be helpful to determine their stability (the fourth criterion). The fifth criterion, adaptability, is met by the DSQ. Defensive behaviors assessed by the DSQ range in adaptation. The DSQ was designed to assess a full range of defenses from those considered less adaptive to those considered more adaptive. Finally, the defenses assessed by the DSQ likely are not sufficiently distinctive, and the four styles do not appear to meet the sixth definitional criterion that defenses are distinct.

Self-report instruments to assess defenses are easy to administer and have been typically used by researchers (Ihilevich and Gleser, 1986; Cramer, 1991). Unfortunately, the psychometric properties associated with these instruments are often poor (e.g., in the DMI, PRO and TAO are presented as two distinct styles yet factor analyses demonstrate they both load on the same factor; see Davidson & MacGregor, 1998). More importantly, self-report instruments require participants to report on constructs believed to be unconscious in nature (Cramer, 1998). Given the empirical research suggesting that in some domains persons are not always able to provide accurate self-reports (Shedler, et al., 1993), it is important to consider what information is provided by self-report measures of defenses. After all, defenses are considered to be unconscious processes outside of awareness. For example, Shedler, Mayman, and Manis (1993) argue that even among people who look good on self-report mental health scales there are two subgroups. One subgroup is psychologically healthy. The second subgroup is made up of people who are psychologically distressed but who maintain an illusion of mental health through defensive denial of psychological distress. Any method by which to assess defenses must therefore correct for some of the difficulties associated with self-report measures.

Clinical observations have been used to assess defenses in an attempt to correct for the limitations of self-report approaches. The clinical observation rating method has been utilized by a number of different researchers (Perry & Kardos, 1995; Vaillant, 1992), and is based on the assumption that persons are not always conscious of their own defensive behavior, and so are largely unable to report their own level of defensiveness or characteristic defense use (e.g., self-report; Cramer, 1991; Perry, 1993; Vaillant, 1988). Vaillant (1992) states that the major value of this approach is the closeness of the data to the kind of observations made in everyday interactions and in clinical practice. The information achieved by using an observational method to assess defenses mirrors the data and observations made in real life (Karasu & Skodol, 1980). That is, by observing a person you can see him interacting with others and you can have him describe threatening or anxiety provoking situations. You attempt to capture a sample of his everyday activities and a sample of the characteristic ways in which he responds. You can also attempt to elicit information about motivation and behavior when using an observational method coupled with an interview. The richness of data during observation, thereby, provides an opportunity to detect unconscious processes present in the behaviors of the person (Vaillant, 1992). The limitations of this approach include difficulty in developing reliable rating systems, the high cost of time and professional involvement, the time required of the participant, and variability in the database caused by interviewer style or method of observation. Therefore, any instrument or method that improves upon these limitations is potentially beneficial to researchers and clinicians alike.

The coder reliability associated with clinical observation of defenses varies depending on the instrument. Two of the most frequently used clinician-guided assessment techniques are Vaillant's Maturity of Defenses Scale (MODS; Vaillant, 1977) and Perry and Cooper's Defense Mechanism Rating Scale (DMRS; Perry and Cooper, 1987; 1989; Perry, Cooper, & Michels, 1987).

In a longitudinal study, Vaillant determined the coder reliability of clinical-observation ratings of defenses and also the relation of these defenses to psychological and physical health in a longitudinal sample (Vaillant, 1976; 1977; Vaillant, Bond, &

Vaillant, 1986; Vaillant & Drake, 1985). Based on clinical interview data, Vaillant rated 95 men for their use of 18 different defenses: Denial, Distortion, Delusional Projection, Projection, Schizoid Fantasy, Hypochondriasis, Turning Against Self, Acting Out, Intellectualization, Repression, Displacement, Reaction Formation, Dissociation, Altruism, Humor, Suppression, Anticipation, and Sublimation (Vaillant, 1976). Using Vaillant's Maturity of Defenses Scale (Vaillant, 1977), inter-coder reliability for independent raters on individual defenses ranged from acceptable (.87 for Hypochondriasis) to unacceptable (.15 for Fantasy) with an overall reliability level of .56 (Cramer, 1991). When individual defenses were classified as mature, intermediate, or immature, however, the inter-rater reliability was much greater (.84; Vaillant & Drake, 1985). Similar increases in coder reliability were reported by Vaillant (1977), who indicated coder reliability for level of maturity to be .72.

In Vaillant's seminal work on defenses (Vaillant, 1977), he reported the inter-coder reliability between two trained coders and between an averaged coder consensus and himself for the MODS. The reliability between the two trained coders ranged from .01 (for Dissociation) to .95 (for Projection), with an average inter-rater reliability of .56. The reliability between the average score of the two trained coders and Vaillant was .74, with a range of .53 to .96. In general, reliability for Vaillant's ratings has been in the moderate range and is greatly improved when maturity level is assessed rather than specific defenses, and when consensus ratings are compared to experienced coders (e.g., consensus between two coders compared to Vaillant).

The DMRS was used to assess twenty-eight defenses in 76 men and women (Perry and Cooper, 1989; Cooper, 1990). The thirty defenses were classified into four levels (as defined by Perry and Cooper): Immature (Minor Denial, Non-Delusional Projection, Hypochondriasis, Passive-Aggression, Acting Out, Schizoid Fantasy), image-distorting (Splitting of Self, Splitting of Others, Mood Incongruent Denial, Bland Denial, Projective Identification, Primitive Idealization, Omnipotence, Devaluation), neurotic (Repression, Dissociation, Displacement, Reaction Formation, Isolation, Intellectualization, Rationalization, Undoing), and mature (Affiliation, Anticipation,

Suppression, Self-Observation, Self-Assertion, Humor, Altruism, Sublimation). Perry & Cooper (1989) report coder reliability for six coders as ranging from .39 to .65 with a median value of .53. In a separate coder reliability study, again with six trained coders, an average inter-coder reliability was only found to be .36 (range .11 to .59) for 22 defenses (Perry & Cooper, 1992). Reliability was improved when ratings were based on group averages (three coder), where coder reliability was found to be .57 (range .35 to .79; Perry & Cooper, 1992). In an additional reliability study using the DMRS and interviews transcribed into vignettes, two trained coders obtained an average inter-rater reliability of .46, which increased to .53 when defenses occurring in less than 5% of the patients were excluded (range .02 to .87, and .19 to .87 respectively; Perry & Cooper, 1992).

Bond (1992) reported the inter-coder reliability for the DMRS in a sample of three coders who each rated twenty participants. For individual defenses, an average inter-coder reliability of .41 (range, .04 to .80) was obtained. When the defenses were classified according to maturity, the average inter-coder reliability increased to .42 (range, .32 to .52). When the defenses were classified according to Perry's summary of defense scales, reliability increased to .54 (range, .30 to .66).

While both MODS and the DMRS have demonstrated coder reliability, both in terms of defense levels and individual defenses, the overall level of reliability for the two measures has only been modest. Therefore, any measure that demonstrates a potential to assess defenses more reliably is worth further investigation. As well, any measure to assess defenses that is easier to use (e.g., is less time consuming or has more explicit training available) than existing measures of defenses is also worth further investigation.

Both Vaillant's MODS and Perry and Cooper's DMRS have also demonstrated validity (see Cramer, 1991, or Perry and Ianni, 1998 for a review). For example, Vaillant has used his measure to assess personality disorders (Vaillant & Drake, 1985), life satisfaction and success (Vaillant, 1977), and physical health outcomes (Vaillant, 1977). Vaillant has been able to test hypothesized relations between defenses and outcomes and has found the expected relations. Another great strength of these observer-based

assessments of defenses is in relation to the definitional criteria for defenses. Because of the nature of the data source (clinical interview with open-ended responses) the respondent is not restricted in number or type of response allowed. Rather than having to choose between alternative behaviors or feelings to a predefined "psychically threatening situation" respondents are free to provide individualized behaviors and feelings. For example rather than being asked a respondent how he would respond after being splashed by a passing motorist (an item on the DMI assumed to be equally psychically threatening to everyone) a respondent can be asked to describe a specific incident that made him angry or anxious. This helps to ensure that the situation is threatening to the person and that the behavior engaged in is defensive. This approach considers that individual differences exist with respect to perceived psychic threats and with respect to behaviors in response to those psychic threats. It is more likely when using clinical interviews, than with self-report questionnaires, to determine if a psychic threat occurred for the person, and whether the behavior in response to the threat was defensive and effective in managing aversive affect. Because clinical interviews can draw on real life experience and behavior, Vaillant has argued that it is observer-based instruments using clinical interviews that should be the gold standard against which all other defense assessment instruments should be validated (Vaillant 1977; 1992); and not highly controlled and constrained laboratory approaches. The first three definitional criteria for defenses can potentially be assessed by these two observational measures of defenses. That is, clinical interviews and instruments have the potential to determine if the behavior being assessed was unconscious, was in response to a psychic threat, and resulted in affect management. The last three definitional criteria (stability, adaptiveness, and distinctiveness) have also been demonstrated for these observer-based instruments. For example, Vaillant has demonstrated stability of defenses over time, how certain defenses (e.g., Sublimation) are adaptive and protect against adverse health outcomes such as high blood pressure, and how using his MODS he can rate not only general defense level, but also individual defenses. The major advantage to using an observer-report instrument to assess defenses is that it is possible to get a free-flowing sample of the participant's

thought processes (Cramer, 1991; Vaillant, 1977), and one is not restricted by some of the limitations of self-report. Taken together observational measures of defenses appear to have promise as a methodology to assess defenses (see Cramer, 1991, or Perry & Ianni, 1998, for a review of observer based instruments of defense assessment).

Observer-report instruments, while potentially offering some strength over self-report instruments, are not without limitations. The most obvious limitation of observer-based instruments is the effort required to learn and reliably use the instrument. The instruments require trained observers to become familiar with the rating instrument and then achieve reliability using the instrument. Often this requires long training and periods of recalibration to avoid coder drift. A related limitation is the effort required obtaining the data from which the defenses are rated. That is, rather than simply having a person complete a self-report questionnaire a trained interviewer is required to administer a clinical interview. This requires training on the part of the interviewer and time on part of both the interviewer and the person being interviewed. Whereas self-report measures may be completed relatively quickly, interviews may be more extensive and time consuming (e.g., one hour). Any new observer-report instrument should not only attempt to address the reliability issues raised above but also the limitations of observer-report instruments (e.g., length of training). Additionally, any instrument used to assess defenses must not only be easy to use and have adequate reliability it must also demonstrate validity and usefulness in hypothesis testing.

Definitions, Validity, and Hypothesis Testing

Historically one problem facing those interested in research involving defenses is the lack of a uniform terminology. In 1973, Sjoback reviewed the work of 12 psychoanalytic writers, attempting to compare them on their definitions and identifications of defenses. The 12 writers identified a total of 27 different names for defenses with only 7 of them in common among the 12 writers. In 1988, Beutel (as cited in Vaillant, 1992) conducted a similar review of the works of 17 psychoanalytic or psychodynamic writers. The 17 writers identified 37 different terms for defenses with only five of them in common (Vaillant, 1992). This becomes even more problematic

when psychological literature is examined, as traditional terms for defenses have been eschewed and replaced with 'cognitive' terms (e.g., altering self-schemas; Horowitz, 1988; Vaillant, 1992). This failure to reach consensus on how many defenses there are, and what to call them, has hindered their acceptance by academics and hampered empirical investigation. More recently, however, researchers in the area of defense have attempted to standardize the number of definitions of defenses. For example, in 1977 Vaillant has published a standardized definition list of defenses. These defenses were similar to those most commonly identified by other researchers and formed the foundation for his subsequent longitudinal work on defenses. Since that time, Vaillant along with other prominent writers in the field of defenses have worked with the American Psychiatric Association to publish a more current standardized definitional list of defenses. In the fourth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV; American Psychiatric Association, 1994) a list of defenses is presented along with a definition for each defense. While this list is not final, it forms the working template from which current research is encouraged, and from which many researcher are working. That is, it provides a standardized starting point from which research can be conducted regarding the reliability and validity of defenses. Any future studies of defenses would be aided by using the terminology and definitions already provided when appropriate (e.g., Vaillant, 1992; 1993; DSM-IV, American Psychiatric Association, 1994), and correcting or adjusting the existing terminology and definitions when faced with empirical or theoretical difficulties rather than constructing a new list of terminology and definitions.

As difficult as it has been to reach a standardized list of defenses it has also been difficult to determine the appropriate criteria by which to judge the validity of a defense instrument. For example, many of the self-report instruments have only been validated against other self-report instruments (Cramer, 1991; Ihilevich & Gleser, 1986), and many laboratory approaches are under such tightly controlled conditions that they do not at all resemble the clinical data from which defenses are predominantly assessed. As well, many observer-report instruments have only been validated against clinician ratings.

Shedler, et al. (1993) discuss the difficulties associated with validation and selecting appropriate validity measures for constructs within the context of illusory mental health. Using the idea behind self-report scales where people are thought to be able to accurately self-report, and the idea behind psychodynamic thinking where people are not thought to be able to self-report due to unconscious processes, Shedler et al. discuss the importance of divergent data sources to assess illusory mental health. For example, the authors hypothesize that “among people who look good on mental health scales there are two subgroups. One subgroup is psychologically healthy. A second subgroup is made up of people who are psychologically distressed but who maintain an illusion of mental health through defensive processes” (Shedler et al., 1993). The authors suggest that it is therefore important to consider multiple data sources when attempting to validate constructs and to rely on self-reports, observer-reports, and other objective measures (e.g., physiological measures). It is therefore important to validate any defense assessment instrument against a number of validity measures that include both self- and observer-reports and objective measures. As well, it is important that defenses are assessed not only by self-report, but also by trained coders in ecologically valid situations to ensure the generalizability of any reported results.

A final problem facing defense assessment is hypothesis testing. Many have dismissed psychodynamic constructs as untestable. For example, critics have dismissed the philosophy of psychoanalysis because of difficulties with the science of psychoanalysis, have dismissed the science of psychoanalysis because of a failure to demonstrate a scientific hypothesis, or have simply remained ignorant of current thinking relating to psychoanalysis (Horgan, 1996). This ignorance is unfortunate as it results in a failure to understand important constructs and a failure to consider alternative theories and research. If this situation is to be remedied it is important that psychodynamic thinking be presented in a manner that is accessible to researchers, and that specific hypotheses relating to psychodynamic constructs be presented and evaluated empirically. Researchers such as Vaillant (1977, 1992), Perry (1993), Bond (1995), and Cramer (1991) have demonstrated that psychodynamic and psychoanalytic concepts are testable.

For example, Vaillant (1977) hypothesized that maladaptive defense use should be associated with poorer life outcomes (e.g., marital satisfaction) and then tested this hypothesis in a longitudinal sample of men. It is to the question of testing the hypothesized relations between defenses and health outcomes that we turn next.

Defenses and Health Outcomes

In 1972, Vaillant and McArthur published a study on the natural history of male psychological health. Using data from the Grant Study (a group of young men who entered a liberal arts college in the 1930s and were followed until death), Vaillant has related defenses to both psychological and physical health outcomes (Vaillant, 1977; 1993). For example, Vaillant has examined the relations between defenses and healthy adult adjustment (1974), mental health (1975), psychosomatic illness (1978), physical health (1977; 1979; 1993), successful aging (Vaillant & Vaillant, 1990), and high blood pressure (Vaillant & Gerber, 1996). Vaillant's work has provided prospective research data relating to defenses and their ability to predict later outcomes.

Vaillant prospectively related maturity² of defense use to health outcomes. In a sample of 95 Grant Study men (Vaillant, 1974) maturity of defense use was related to life adjustment. Those men using more mature defenses were more likely to have successful life adjustment, as defined by having a successful career and good social health. As well, they were more likely to have experienced good childhood environments, as defined by good mother-child relationships or few infant childhood problems. Poor childhood environment was associated with increased use of less mature defenses such as fantasy and hypochondriasis and decreased use of mature defenses such as suppression. In another study on male psychological health, Vaillant (1978) found that men who were dead or chronically ill at age 53 years had used less mature defenses compared to men who were alive and not chronically ill at age 53 years.

In a follow-up to his 1974 study on life adjustment, Vaillant again looked at the relation of maturity of defense use to adult adjustment in a subsample of the Grant Study. Vaillant found that maturity of defenses predicted successful adult adjustment and marital success, happiness, and objective physical health (Vaillant, 1977). Use of mature

defenses also predicted less psychopathology and less likelihood of being in a lower socioeconomic social class. In terms of specific health outcomes, those men with more mature defense use were less likely to have four or more hospitalizations, to have five or more sick days per year, and to be rated as in poor health by a physician, and more likely to subjectively rate their own health as good (Vaillant, 1977). Taken together, these results suggest that mature defense use is prospectively related to both psychological and physical health.

Just as Sigmund and Anna Freud laid the theoretical foundations for understanding the nature and function of defenses, so too has Vaillant laid the empirical foundations for understanding the relation between defense use and psychological and physical health outcomes. Perhaps most importantly, Vaillant has validated theoretical expectations regarding defense use and has demonstrated that hypotheses regarding defense use can be empirically tested. It is on the work of Vaillant relating defense use to health outcomes that this dissertation builds. I now turn to a consideration of what constitutes adaptive or healthy defense use.

Patterns of Defense Use

Many contemporary psychodynamic theorists now recognize that defenses are not inherently maladaptive (Cramer, 1991; Sjoback, 1993). According to current psychoanalytic (Cooper, 1998) and non-psychoanalytic (Cramer, 1998) conceptualizations, defenses are compromise solutions that are employed to maximize gratification of impulse demands within the constraints imposed by reality, and are not inherently maladaptive (Brenner, 1981; Gill, 1963; Sandler, 1974; Schafer, 1968). Depending on the circumstances, the degree of gratification achieved through the use of defenses may be considerable. Defenses may therefore function in ways that are both defensive, by modulating responses to reduce or avoid threat, and adaptive, by offering partial, acceptable, and indirect gratification of needs (e.g., Vaillant, 1993). This view suggests that the meaningful aspect of defenses is not the extent to which they are used, but the particular defenses that are employed and how they are employed in relation to each other. The focus of most research on defenses, however, has been on the overall

amount of defensiveness (e.g., Helmers & Krantz, 1996) or on the use of a particular defense in isolation of others (e.g., Denial; Croog, Shapiro, & Levine, 1971; Trijsburg, Erdman, Duivenwoorden, Thiel, & Verhage, 1987). This focus is inconsistent with Sigmund Freud's original emphasis on the pattern of a person's defense use as the crucial element for understanding pathology and adjustment. Accordingly, it is important to discuss the relative use of one defense to another. The Defense-Q provides an observational method by which to reliably assess the relative use of defenses and subsequently test the hypothesized relations between defenses and outcomes.

The Defense-Q

The Defense-Q (see Appendix A) provides an ipsative approach to assessing relative defense use. That is, the Defense-Q is an instrument with which to assess the pattern of a person's defense use. The ipsative nature of the Defense-Q precludes the meaningful assessment of a person's level of overall defensiveness because the level is constant across the 25 defenses assessed. Thus, the focus of the Defense-Q is on the pattern of defense use, or which defenses a person uses most and least frequently.

Selection of Defenses for Inclusion in the Defense-Q

As Schafer (1954) noted long ago, "There cannot be any 'correct' or 'complete' list of defenses, but only lists of varying exhaustiveness, internal theoretical consistency, and helpfulness in ordering clinical observation and research findings" (p. 161). Indeed, to date, no set of defenses has been universally accepted (Cramer, 1991; Vaillant, 1992). The Defense-Q, however, integrates the Diagnostic and Statistical Manual of Mental Disorders (3rd ed. and 4th ed.; DSM-III-R, American Psychiatric Association, 1987; DSM-IV, American Psychiatric Association, 1994) definitions of defenses that are currently being used along with those definitions provided by Kernberg (1967; 1975), Anna Freud (1966), Sigmund Freud (1894/1962; 1926/1962; 1926/1950), and Vaillant (1971, 1977, 1992, 1993). The 25 defenses included in the Defense-Q are presented in Table 2. To help readers relate the Defense-Q list to other contemporary and historical lists, the defenses in the Defense-Q have been cross-indexed with lists of those provided in the DSM-III-R (American Psychiatric Association, 1987) and the DSM-IV (American

Psychiatric Association, 1994). In addition, the names of persons who first identified or contributed most to the development, identification, and naming of each defense are also presented in the table

Definitions of Defenses

Just as there is no standard list of defenses, there are also no standard definitions of defenses. The Defense-Q started with the definitions used in DSM-III-R which were modified based on the DSM-IV and difficulties with reliability coding. The Defense-Q attempted to remain as close as possible to the DSM definitions of defenses but modifications were made at times to avoid confusion regarding defenses that are conceptually similar and not adequately distinguished in the DSM. For example, Intellectualization and Rationalization are often not adequately distinguished, and so are frequently mistaken for each other. In defining these defenses, the Defense-Q emphasizes the distinctions between the two. Table 3 presents excerpts from the coding manual for these two defenses. The essential difference between these definitions is the means employed to avoid threatening affect. With Rationalization, the focus is on a distorted, incorrect explanation, whereas with Intellectualization, the focus is on an overly abstract, though not necessarily incorrect, explanation (for behavioral examples, see Table 3). Further information on the development of the Defense-Q can be found in Davidson, MacGregor, Johnson, Woody, and Chaplin (1999) and Davidson and MacGregor (1996).

Comparing Defense-Q Profiles To a Prototypical Profile of Adaptive Defense Use

The pattern of a person's defense use can be described with a Defense-Q profile (see Figure 1). For example, in portraying the typical defense use of two persons, one can see that the first person is characterized as employing Isolation and Passive-Aggression most frequently, and Idealization and Intellectualization least frequently. The second person, however, has quite a different pattern of defenses, and is characterized as using Acting Out and Grandiosity most frequently, and Turning Against Self and Repression least frequently. Although these characterizations of defense use may be helpful clinically, testing hypotheses about the relation between different patterns of defense use

and various outcomes requires an index or score that summarizes a person's Defense-Q profile. Because the pattern of a profile is an arbitrary function of the ordering of the defenses on the horizontal axis of the profile, no meaningful absolute index can be created of a profile's pattern in isolation (Chaplin & Panter, 1993). Instead, the pattern of a profile can be indexed by comparing it to another profile (Chaplin & Panter, 1993; Cronbach & Gleser, 1953). A comparison profile based on a theory of adaptive defense use was constructed. According to Vaillant (1977), mature or adaptive defenses are employed

... to keep affects within bearable limits during sudden life crises (e.g., following a death); to restore emotional balance by postponing or channeling sudden increases in biological drives (e.g., at puberty); to obtain a time-out to master changes in self-image (e.g., following major surgery or unexpected promotion); to handle unresolved conflicts with people, living or dead, who one cannot bear to leave; and to survive major conflicts with conscience (e.g., killing in wartime, putting a parent in a nursing home (Vaillant, 1977, p.10).

But which defenses are adaptive and can help protect the person, and which are maladaptive? In Sigmund Freud's three essays on sexuality, he proposed the ontology of defenses and suggested that even delinquency could evolve into Altruism (S. Freud, 1905/1953). Vaillant (1971) extended Sigmund Freud's original thinking into a hierarchy of defenses, and he conceptualized defenses as falling into one of four categories, ranging from psychotic to mature, based on the "maturity and pathological import" of the specific defense (Vaillant, 1977).

Based on Sigmund Freud's original idea that defenses can be arranged on a continuum of adaptation, and on Vaillant's extensive theoretical and empirical work relating defense maturity to both physical and mental health, a Prototypical Adaptive Defense Profile (ADP) was constructed. The prototypical ADP was constructed from the theoretical accounts of Kernberg (1967, 1975), A. Freud (1966), Sigmund Freud (1894/1962; 1926/1962; 1926/1950), Vaillant (1971; 1977; 1992; 1993), and the glossary of technical terms of the DSM-III-R and the DSM-IV (American Psychiatric Association,

1987; 1994). Eight coders read these accounts, and then independently constructed a prototypical Adaptive Defense-Q profile. The average correlation among these coders for their constructed Defense-Q profiles was .92. Where disagreements existed, (primarily in whether items should be placed in the 'neither characteristic nor uncharacteristic' pile or the 'slightly uncharacteristic' pile, the averaged rank for the item (defense) was determined and the defense was then assigned to the rank closest to the averaged rank. The ADP is shown in Figure 2.

To derive a score of an adaptive pattern of defense use, the similarity of a person's Defense-Q profile to the prototypical ADP was determined (Block, 1978; McKeown & Thomas, 1988). The similarity between a participant's Defense-Q profile and the ADP was indexed with a within-subject correlation computed across the 25 defenses in the profile. This correlation represents the degree to which persons are similar in their defense profiles to the ADP, with -1 being perfectly dissimilar and 1 being perfectly similar. Thus, for the two persons displayed in Figure 1, Person one has an ADP score of .48, whereas Person two has a score of -.64; these single scores allow for a summary of the adaptiveness of the typical defenses employed by each person.

Reliability and Validity of the Defense-Q

Reliability and validity studies of the Defense-Q have been promising. Davidson and MacGregor (1996) report reliability for the Defense-Q using trained undergraduate coders. Using Cronbach's alpha, reliability coefficients were calculated two ways: For individual defenses and for individual coders. The averaged reliability for each defense ranged from .28 for Undoing to .92 for Humor. The average reliability coefficient for all 25 defenses was .73, suggesting that individual defenses can be assessed reliably using the Defense-Q. Eighty-eight percent of the defenses had a reliability greater than .50, and 64% had reliability greater than .75. These values suggest that the Defense-Q reliably assesses a comprehensive number of individual defenses and compares favorably with existing measures of defenses (cf. Cramer, 1991). Coder reliability across all subjects and all defenses was calculated and ranged from .63 to .76, with an average reliability of .69. These results suggest that coder agreement can be achieved

with the Defense-Q. These reliability coefficients are equal to or greater than those reported for other instruments used to assess defenses, again suggesting that the Defense-Q is an instrument that is both reliable, and that can be used by relatively untrained coders (e.g., coders without a Ph.D. in clinical psychology).

Davidson, et al. (1999) report on the validity correlates of the Defense-Q to both self-report and objective report measures. Adaptive defense use was related to lower self-reported hostility and depression and to higher observer ratings of competency and empathy during role-playing situations. In a population-based sample, adaptive defense use was related to lower self-reported hostility and depression, lower incidence of binge drinking, and lower use of pills to control weight, higher use of dietary changes to control weight, increased objective public health nurse ratings of mental competence, and self-reported satisfaction with health. While these results do not conclusively demonstrate the validity of defenses and the Defense-Q, they do suggest some evidence for construct validity. Theoretically expected results were found in both a convenience sample and in a population-based sample. As well, defense use assessed by the Defense-Q was related to both self-report and observer-report indices. This is particularly important due to the concern raised by Shedler et al. (1993) over the use of self-report instruments. These results suggest that the Defense-Q is not only an instrument that can be used reliably, but also that preliminary studies indicate that it is an instrument that has theoretically consistent construct validity. Since previous results with the Defense-Q have found expected relations between adaptive defense use profile and health outcomes it is important to consider the nature of the defense use profile.

Current Investigation

The Defense-Q offers a reliable and easy to use observational instrument to assess defenses and test hypotheses relating to defenses and health outcomes (Davidson & MacGregor, 1996; Davidson, et al., 1999; Perry & Ianni, 1998). It has a well-documented training procedure providing definitions for each defense, and it can be used by minimally trained coders. The Defense-Q can be used to test the hypothesized relation between defense use and health outcomes. Study One builds on the work of

Alexander (1939), who first hypothesized that defense use was related to blood pressure, and on current findings relating defense use to blood pressure by Vaillant and Gerber (1996), Helmers, et al. (1995), and Larson and Langer (1997). Study One tests the relation between adaptive defense use and resting blood pressure levels in a population-based sample. Study Two also builds upon the work Vaillant (1977) who found that adaptive defense use was related to good life outcomes (defined by Vaillant as encompassing constructs such as self-reported happiness, high income, rich friendship pattern, and fewer hospitalization). Study Two tests the prospective relation between adaptive defense use and physician health care costs in the same population-based sample.

Footnotes

1 The term defense refers to an unconscious mode of mental functioning demonstrated by a person and not to specific behaviors, types of affect, or ideas. This use is consistent with that proposed by authors such as Ihlevich and Gleser (1986) who also consider defenses to refer to unconscious mental processes. For an alternative use of the word defense, see Cramer, 1991.

2 Vaillant uses the term maturity to refer to defenses that are both more likely to be seen with chronological development (e.g., Humor which is more characteristically seen in adults versus Psychotic Denial which is more characteristically seen in children), and more likely to be psychologically adaptive (i.e., less likely to be seen in severe forms of psychopathology). Mature defense use would therefore include the use defenses such as Humor, Sublimation, or Altruism more frequently than defenses such as Psychotic Denial, Projection, or Displacement (Psychotic, Immature, and Neurotic defenses respectively according to Vaillant's classification of defenses).

Table 1

Defenses and Definitions**REPRESSION**

Repression is the cathartic escape from impulses causing intrapsychic conflict by banishing the impulses from awareness so there is no memory or affect remaining. This catharsis allows the ego to defend against the impulses by removing the impulses from conscious memory. The impulses are repressed and removed from awareness.

ISOLATION

Isolation is the cathartic division of impulses causing intrapsychic conflict such that affect is lost while the associated veridical idea of the impulses are retained. This catharsis allows the ego to retain the thoughts of the impulse while isolating the thought from the affect of the impulse. The impulses become divided into affect and thought, and only the thought is retained.

DISSOCIATION

Dissociation is the cathartic escape from impulses causing intrapsychic conflict by temporarily losing a sense of the self. This loss of the self allows the ego to defend against the impulses by removing itself from them. The impulses remain unchanged as the ego separates from the self.

DISPLACEMENT

Displacement is the cathartic redirection of impulses causing intrapsychic conflict towards objects that are perceived as less threatening. This catharsis allows the ego to defend against the threatening impulses by direct expression towards a safe object. The impulses are directly expressed although their expression is delayed and is towards a safe object.

PSYCHOTIC DENIAL

Psychotic denial is the cathartic escape from impulses causing intrapsychic conflict by breaking from reality and failing to see or perceive external reality. Psychotic denial affects the perception of external reality more than the perception of internal reality. This catharsis allows the ego to defend against the impulses by failing to perceive the reality

causing the impulses. The impulses remain unchanged as the ego escapes from the impulses by failing to perceive reality.

NEUROTIC DENIAL

Neurotic denial is the cathartic division of impulses causing intrapsychic conflict by refusing to consider or acknowledge their implications. This catharsis allows the ego to defend against the impulses by failing to acknowledge the implications of the impulses. The impulses are divided and the negative consequences are not dealt with.

PROJECTION

Projection is the cathartic redirection of impulses causing intrapsychic conflict towards other non-self objects. The projected impulses are unrealistic. This catharsis allows the ego to defend against the impulses by attributing them to non-self objects and see other objects as experiencing the impulses rather than the self. The impulses are redirected outward onto other objects.

SUBLIMATION

Sublimation is the cathartic transformation of impulses causing intrapsychic conflict into socially acceptable and productive activities or behaviors.

FANTASY

Fantasy is the cathartic escape for impulses causing intrapsychic conflict by using transient fantasies, excessive daydreaming, or imaginary achievements. This catharsis allows the ego to defend against the impulses by escaping from them and their associated conflict. The impulses remain unchanged but the ego temporarily escapes.

REACTION FORMATION

Reaction formation is the cathartic transformation of impulses causing intrapsychic conflict into exaggerated and opposite impulses.

HUMOR

Humor is the cathartic discharge of impulses causing intrapsychic conflict through the use of humor laughter. This catharsis allows the ego to defend against the impulses without directly discharging the affect associated with the impulse in a non-humorous manner. The impulses are discharged through the use of humor.

TURNING AGAINST SELF

Turning against self is the cathartic transformation of impulses causing intrapsychic conflict into exaggerated negative qualities and attributes tuned inward and ascribed to the self. In turning against self the impulses are dealt with by blaming the self for the impulse. This catharsis allows the ego to defend against the impulses by blaming the self for their etiology and for the conflict they cause. The impulses are transformed and the self is blamed for their etiology.

UNDOING

Undoing is the transformation of impulses causing intrapsychic conflict into symbolic gestures as a means of negating or making amends for the impulses. This catharsis allows the ego to defend against the impulses by making amends for them through an unconscious symbolic penance. The impulses are transformed and ritualized.

PASSIVE AGGRESSION

Passive aggression is the cathartic redirection of impulses causing intrapsychic conflict by expressing them indirectly or through indirect passive means rather than directly. This catharsis allows the ego to defend against the impulses without directly experiencing the adverse consequences associated with direct expression of the impulses. The impulses are indirectly turned outwards.

PSEUDOALTRUISM

Pseudoaltruism is the cathartic discharge of impulses causing intrapsychic conflict through helping others with similar impulses resolve their intrapsychic conflict. This catharsis allows the ego to defend against the impulses by not having to acknowledge or deal with them personally but by being able to deal with them in others. The impulses are discharged and dealt with in others.

SPLITTING

Splitting is the cathartic division of impulses causing intrapsychic conflict by viewing the object causing the impulses as alternately all good and all bad. This division of impulses allows the ego to defend against the impulses by failing to integrate good and bad and thus eliminating ambiguity. The impulses are divided and seen in black and white terms.

Table 2

The Defense-Q, its Historical Sources, and Relation to Lists of Defenses Published in the DSM-III-R and DSM-IV

Defense-Q	Historical Origin	DSM-	
		III-R	IV
Sublimation	S. & A. Freud	x	
Rationalization	Horowitz	x	x
Humor	S. Freud	x	
Pseudoaltruism ^a	S. & A. Freud	x	
Idealization	Kernberg	x	x
Neurotic Denial	S. & A. Freud	x ^b	x
Fantasy ^c	S. Freud	x	x
Intellectualization	Vaillant	x	x
Reaction Formation	S. Freud	x	x
Displacement	S. Freud	x	x
Isolation	S. Freud	x	x
Devaluation	Kernberg	x	x
Identification with Aggressor	A. Freud		
Turning against Self	S. Freud		
Repression	S. Freud	x	x
Grandiosity	Kohut		
Turning against Others	Ihilevich & Gleser		
Passive Aggression	S. Freud & Vaillant	x	x
Undoing	S. Freud	x	x
Projection	S. Freud	x	x
Regression	S. Freud		
Splitting	S. Freud & Kernberg	x	x

Acting Out	Vaillant	x	x
Dissociation	S. Freud & Janet	x	x
Psychotic Denial	S. & A. Freud	x ^d	x

^aNamed "Altruism" in DSM-IV

^bNeurotic denial represents the more sophisticated range of the broader mechanism of Psychotic denial

^cNamed "Autistic Fantasy" in DSM-III-R

^dPsychotic denial represents the more primitive range of the broader mechanism of denial.

Table 3

Definition and Description of Rationalization and Intellectualization

RATIONALIZATION

DEFINITION OF RATIONALIZATION.

Rationalization is the cathartic transformation of an impulse causing intrapsychic conflict into a rational sounding and reassuring but distorted explanation. There is a change in the cognitions associated with the impulse and there is a rational explanation that resolves the perception of a conflict. This catharsis allows the ego to defend against the impulse by dealing with it through a distorted explanation that does not accurately reflect the impulse.

PROCESS TO CODE RATIONALIZATION

1. There is a threatening or anxiety provoking impulse that causes intrapsychic conflict.
2. There is a rational sounding and reassuring but distorted explanation for the impulse.
3. By engaging in rationalization there is a catharsis of the impulse and the conflict is at least temporarily relieved or resolved.

CASE EXAMPLES

1. After stealing a sum of money from a wealthy family, Kate protects herself from feelings of guilt by emphasizing the family's secure financial status and assuring herself that they wouldn't grieve the loss of such an insignificant amount.
2. Following a first date, Michael eagerly awaited Christina's phone call each day for a week, but she did not call. To avoid feelings of rejection and sadness, Michael insisted that Christina must have been too busy with work and school.
3. Elizabeth has a tendency to attribute her son's successes to his intelligence and ability but thinks his poor performance is due to lack of effort and laziness rather than his failure to understand the material.
4. Bradley, a company employee who worked his way up the corporate ladder by unfair means, rationalizes that he must obviously be more resourceful and hard-driving than his fellow employees, since everyone engages in similar behaviour.

SIMILAR DEFENSE MECHANISMS AND DIFFERENTIATING FEATURES

Rationalization: The cathartic transformation of impulses causing intrapsychic conflict into rational sounding and reassuring but distorted explanations.

Example: Jason is upset at failing his chemistry class.

Rationalization as a defense: Jason believes that the reason he failed was because the instructor did not mark on a bell curve and wrote the exam such that only a few people in the class would pass.

1. **Isolation:** The cathartic division of impulses causing intrapsychic conflict such that affect is lost while the associated veridical idea of the impulses is retained.

Isolation as a defense: Jason, a chemistry major, knows he is failing the class but cannot identify his feelings.

2. **Turning against self:** The cathartic transformation of impulses causing intrapsychic conflict into exaggerated negative qualities and attributes turned inward and ascribed to the self.

Turning against self as a defense: Jason believes that he is stupid and will never succeed at anything.

3. **Projection:** The cathartic placing of impulses causing intrapsychic conflict onto another non-self object.

Projection as a defense: Jason comments to a friend that he (the friend) must be upset about failing chemistry since it is his major.

4. **Intellectualization:** The cathartic transformation of impulses causing intrapsychic conflict into abstract generalizations.

Intellectualization as a defense: Jason believes that he is failing because he lives in an age of increasing intellectual demand and competition from foreign universities and that the standards in the natural sciences must be such that only the academically elite succeed.

5. **Undoing:** The transformation of impulses causing intrapsychic conflict into symbolic gestures as a means of negating or making amends for the impulses.

Undoing as a defense: In order to improve his performance Jason buys a day timer, six different coloured high-lighters, and a pocket memo-minder. Jason plans his study schedule each morning and noon according to a colour scheme corresponding to the components of the chemistry class, he then uses his pocket memo-minder to indicate what he should be studying.

6. Neurotic denial: The cathartic division of impulses causing intrapsychic conflict by refusing to consider or acknowledge their implications.

Neurotic denial as a defense: Jason believes that even though he is failing chemistry it will in no way affect him becoming a chemist.

7. Turning against others: The cathartic transformation of impulses causing intrapsychic conflict into exaggerated blame and attributes turned outward and ascribed to others.

Turning against others as a defense: Jason believes that he is failing because his professor did not teach well.

INTELLECTUALIZATION

DEFINITION OF INTELLECTUALIZATION

Intellectualization is the cathartic transformation of impulses causing intrapsychic conflict into abstract generalization. There is a change in the cognitions associated with the impulse and there is an abstract explanation that resolves the perception of a conflict. This catharsis allows the ego to defend against the impulse by dealing with it through abstract generalizations that do not accurately reflect the impulse.

PROCESS TO CODE INTELLECTUALIZATION

1. There is a threatening or anxiety provoking impulse that causes intrapsychic conflict.
2. There is an abstract and generalized explanation for the impulse.
3. By engaging in intellectualization there is a catharsis of the impulse and the conflict is at least temporarily relieved or resolved.

CASE EXAMPLES

1. While describing her stormy relationship with her deceased mother, Tammy concluded that her mother was a rather passive individual and was in many ways an archetypical female of her generation.

2. After an unpleasant confrontation with a co-worker, Jason sat down at his desk and began to analyze the situation in terms of Organizational Behaviour theory.
3. Jo-Ann had recently been involved in an intense relationship with a man whom she had suspected of cheating on her. After the relationship ended, she insisted that they discuss the factors that had led to their break-up in terms of society's increasing acceptance of promiscuous behaviour.
4. "Basic Instinct star Sharon Stone and country singer Dwight Yoakam were a sizzling couple for a month in 1991. Then she gave new meaning to the expression 'stone cold' revealing, 'Honey, a dirt sandwich is better than Dwight Yoakam'. He said, 'I think that the gross sensationalism generated by our four-week relationship is a tragic commentary on society's infatuation with any form of celebrity'". - People Magazine

SIMILAR DEFENSE MECHANISMS AND DIFFERENTIATING FEATURES

Intellectualization: The cathartic transformation of impulses causing intrapsychic conflict into abstract generalization.

Example: Christopher is upset and blames his wife for the breakdown of their marriage and their divorce.

Intellectualization as a defense: Christopher describes the breakdown of his marriage as inevitable given the social mores of society and the decline of the traditional family.

1. **Isolation:** The cathartic division of impulses causing intrapsychic conflict such that affect is lost while the associated veridical idea of the impulses is retained.

Isolation as a defense: Christopher is not at all emotional or bothered by the breakdown of his marriage or the loss of his wife of fifteen years.

2. **Turning against self:** The cathartic transformation of impulses causing intrapsychic conflict into exaggerated negative qualities and attributes turned inward and ascribed to the self.

Turning against self as a defense: Christopher believes that it was his fault that his marriage broke down because he was not able to devote enough attention to his wife.

3. **Projection:** The cathartic placing of impulses causing intrapsychic conflict onto another non-self object.

Projection as a defense: Christopher believes that his wife is upset with him, and that she blames him for the breakdown of their marriage.

4. Rationalization: The cathartic transformation of impulses causing intrapsychic conflict into rational sounding and reassuring but distorted explanations.

Rationalization as a defense: Christopher explains the breakdown of his marriage in terms of the financial pressures associated with a larger household and caring for two people.

5. Undoing: The transformation of impulses causing intrapsychic conflict into symbolic gestures as a means of negating or making amends for the impulses.

Undoing as a defense: Christopher calls his ex-wife six times a day to ensure that she is alright and makes a list of where he will be each day, with phone numbers to give to her, should she need to contact him in an emergency.

6. Neurotic denial: The cathartic division of impulses causing intrapsychic conflict by refusing to consider or acknowledge their implications.

Neurotic denial as a defense: Christopher believes that even though he and his wife have divorced, they should still be able to live together and their lives should not change.

7. Turning against others: The cathartic transformation of impulses causing intrapsychic conflict into exaggerated blame and attributes turned outward and ascribed to others.

Turning against others as a defense: Christopher believes that it was his wife's fault that he ended up getting a divorce because she was constantly undermining his authority.

Figure Captions

Figure 1. Defense profiles for two persons compared to the Adaptive Defense Profile

Figure 2. Prototypical Adaptive Defense Profile

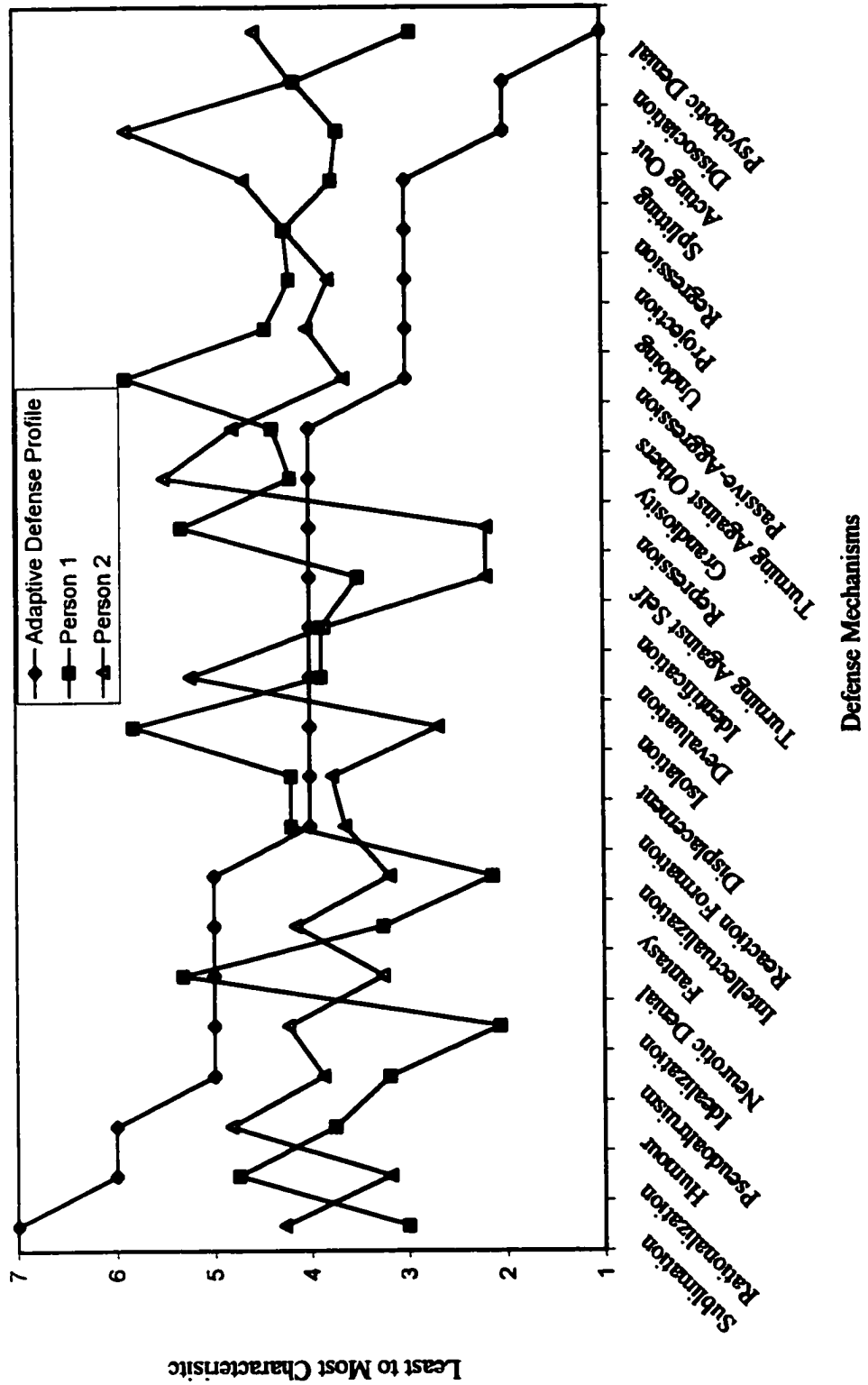


Figure 1

Defense Mechanisms

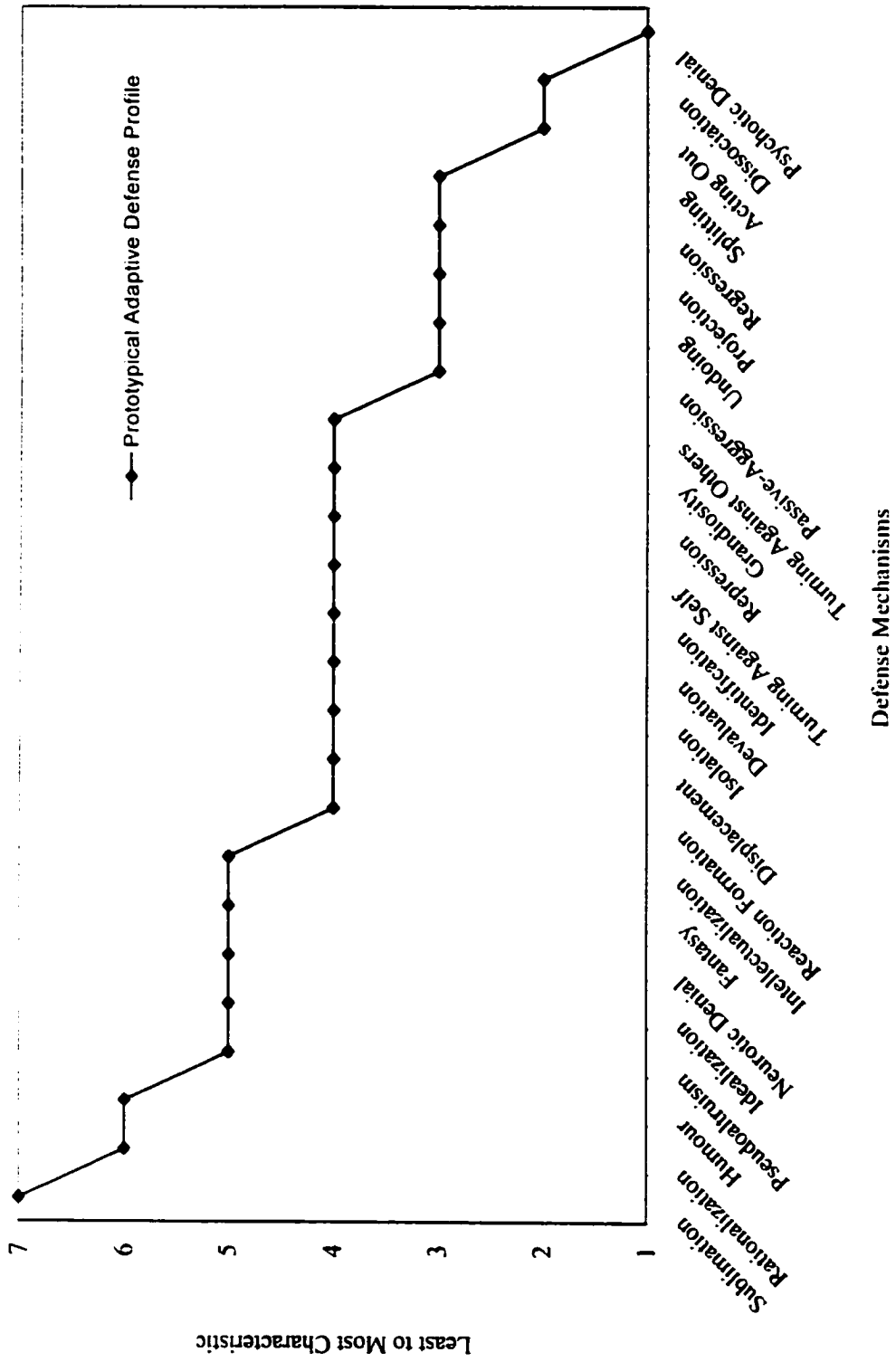


Figure 2

CHAPTER TWO

Abstract

In 1939 Alexander introduced the idea that psychological factors contribute to the development and maintenance of high blood pressure. Since that time researchers have attempted to identify some of these psychological variables. I tested if adaptive defense use had a larger impact on resting blood pressures in older compared to younger persons.

From the Nova Scotia Health Survey 1995 (NSHS95), a population-based sample stratified on age and gender, a random subsample of 667 persons were selected for this investigation. Participants had their resting blood pressure taken three times separated by 5 minutes on each of two days separated by approximately one week. Resting blood pressure was calculated as the average between the second and third readings on both days. Participants also underwent the Expanded Structured Interview (ESI; Hall, Davidson, MacGregor, & MacLean, 1998), a video-recorded interpersonally stressful interview. Using the Defense-Q (MacGregor & Davidson, 1998) each participant was rated for defense use by a coder blind to blood pressure status. Adaptive Defense Profiles were then computed for each participant.

In hierarchical regression analyses there was a significant age by gender by defense use interaction for both systolic ($\beta = .25, p < .05$) and diastolic ($\beta = .26, p < .05$) blood pressure. Analyses of the slopes of the regression lines revealed that adaptive defense use predicted lower resting systolic and diastolic blood pressure in 65+ year old women. These results suggest that adaptive defense use may play a protective role in terms of the development of high blood pressure later in life.

Results are discussed in terms of the physiological arousal – cardiovascular reactivity model, gender differences, and the mechanism by which adaptive defense use may protect against high blood pressure later in life.

The Impact of Adaptive Defense Use on Resting Blood Pressure Across the Life Span

It must be emphasized that only understanding of the totality of the psychodynamic structure which is characteristic of these patients [those with elevated blood pressure] makes statistical observations meaningful. Without such an understanding, derived from detailed psychodynamic studies, intelligent statistical studies are impossible. (Alexander in Gressel et al., 1949, p. 272).

Defense Use and Blood Pressure

In 1939 Franz Alexander published a seminal article on the emotional factors that contribute to hypertension. Working from a psychoanalytic perspective, Alexander proposed that neurotic personality traits, inhibited aggressive impulses, and inhibited hostile tendencies were contributing factors to the development of hypertension. Since that time many researchers have investigated the psychosomatic relation between defense use¹ and blood pressure. Vaillant and Gerber (1996) attempted to determine what psychological factors contribute to high blood pressure and treatment response in men. Using a sample of 193 college-aged men initially interviewed between 1940 and 1942, Vaillant and Gerber assessed hypertensive status 50 years post-interview to determine which psychological variables might contribute to the development of hypertension. Vaillant and Gerber found that use of immature defenses² (those defenses associated with Axis II disorders) was associated with the early onset of poor health, and that the use of the adaptive defenses of Sublimation, Humor, and Displacement was associated with a lower risk for developing hypertension. Vaillant and Gerber's findings are important for a number of reasons. First, they used observational methods to assess defense use and so avoided a number of the limitations associated with self-report measures (Davidson & MacGregor, 1998). Second, they found three defenses that were significantly associated with decreased risk for hypertension incidence. That is, Vaillant and Gerber considered the overall adaptive or maladaptive use of defenses and their relation to blood pressure. Third, the sample was followed longitudinally and did not exhibit high blood pressure at the time of initial assessment. This study, however, used a convenience sample that only consisted of male participants.

Other researchers, using slightly different methodologies, have also looked at the relation between defense use and blood pressure. Using the self-report Defense Mechanism Inventory (DMI), Belfrage (1978) examined defense level and blood pressure in Canadian hypertensive, healthy control, and ulcer patients. Contrary to the author's expectations, the hypertensive group scored significantly higher on Turning Against Self defenses; and significantly higher on Turning Against Self and Reversal defenses and significantly lower on Turning Against Object and Projection defenses when compared to general norms for adult United States males. Minsky (1978), also using the DMI, looked at defense levels in hypertensive and normotensive men in the United States. He found that hypertensives also scored significantly higher on Turning Against Self defenses. Additionally, Minsky (1978) found that hypertensive men scored significantly higher on Reversal defenses and significantly lower on Turning Against Object defenses compared to normotensive men. Compared to the general norms for United States males, these same hypertensive men were significantly higher on Turning Against Self and Reversal defenses and significantly lower on Turning Against Object and Projection defenses. Although both Belfrage and Minsky found Turning Against Self defenses to be higher in hypertensive patients, Minsky additionally found other defenses to also be associated with hypertensive patients. This makes the results between these two studies difficult to interpret, especially in light of the fact that Turning Against Self defenses were hypothesized by Belfrage not to be related to hypertensive status. Finally, the samples used in these two studies were selective and relatively small (Belfrage – 20 hypertensives; Minsky – 17 hypertensives).

A third group of researchers have investigated the relation between a general index of defensiveness and blood pressure, rather than examining use of specific defenses. Based on the psychodynamic assumption that repressed hostility predisposes persons to cardiovascular reactivity, Helmers et al., (1995) examined the relation between defensive hostility and blood pressure. Using a self-report measure of social desirability (Crowne & Marlowe, 1964) to assess defensiveness, Helmers et al. (1995) demonstrated that those persons who were both high defensive and high hostile had more functionally severe coronary disease, had greater ischemia during mental stress, and had longer

duration of ischemia during ambulatory monitoring. In a follow-up study, Helmers and Krantz (1996) also demonstrated that high defensive and high hostile men exhibited greater systolic blood pressure levels and a trend towards greater diastolic blood pressure levels.

Similar relations between defensiveness and blood pressure have been reported by other researchers. Shapiro, Goldstein, and Jamner (1995) found that high defensive and high hostile persons demonstrated higher levels of diastolic blood pressure and heart rate in challenging work environments (hospital settings). Jorgensen, Abdul-Karin, Kahan, and Frankowski (1995) found that the interaction between high defensiveness and high hostility was associated with increased systolic blood pressure and heart rate in undergraduate men during challenging mental arithmetic tasks. In addition, Larson and Langer (1997) found that high defensive and high hostile undergraduate men demonstrated higher heart rates during mental stressor tasks than other comparison groups. The latter studies on defensiveness again reinforce the importance of this construct in understanding blood pressure. These studies, however, employed a self-report social desirability index to assess defensiveness, employed non-representative samples, and were primarily composed of male participants.

Few researchers have considered the impact of age on the relation between defense use and blood pressure despite the empirical evidence that suggests that defense use differs across the life span (Cramer, 1991; Vaillant, 1977; Vaillant 1993). For a comprehensive understanding of the relation between defense use and blood pressure, it is important to consider how each of these two concepts are impacted by age.

Defense Use Across the Life Span

In 1926 Anna Freud suggested that individual defenses can be chronologically ordered based on age. Since that time a number of researchers have taken this hypothesis and attempted to investigate the maturation of defense use. Cramer (1991) provides an overview of the hypothetical chronological development of defense use based on both age and psychosexual stages. For example, Engel (as cited in Cramer, 1991) suggested that infancy is characterized by use of Denial, Repression, and Identification, whereas

adulthood is characterized by the use of Rationalization and Undoing. Vaillant (1977) has suggested that childhood is characterized by Denial and Projection, whereas healthy adulthood is characterized by Altruism, Humor, and Sublimation. In a review of studies of defense use and age, one consistent finding is that the use of Denial decreases with age (Cramer, 1991). Additionally, it appears that Projection and Turning Against Self decrease between adolescence and adulthood. As well, in general, the use of more adaptive or healthy defenses (e.g., Sublimation) increases with age and the use of more maladaptive or unhealthy defenses (e.g., Projection) decreases with age (Cramer, 1991).

Labouvie-Vief, Hakim-Larson, and Hobart (1987) examined age, ego level, and life span development of coping and defense processes in 100 men and women between the ages of 10 and 77. Labouvie-Vief et al. (1987) cite the work of Haan (1977) and Vaillant (1977) as the basis for their investigation. Both Haan and Vaillant have found evidence suggesting that coping and defending change and are reorganized in adulthood. As such, they both emphasize the importance of considering age differences when investigating defense or coping use. Labouvie-Vief et al. (1987) findings support previous findings suggesting that age and defenses do interact and that defenses change with age. These findings support current thinking that personality does change across the life span, and that these changes continue into adulthood.

How to Conceptualize Defense Use Across the Life Span

Many contemporary theorists now recognize that defenses are not all inherently maladaptive (Cramer, 1991; Sjoback, 1973). Defenses function in ways that are both defensive, by modulating responses to reduce or avoid threat, and adaptive, by offering partial, acceptable, and indirect gratification of needs (e.g., Vaillant, 1993). Vaillant has demonstrated that the use of mature or adaptive defenses compared to immature or maladaptive defenses predicts better life outcomes such as a greater satisfaction with one's career and a greater satisfaction with one's social health (e.g., rich friendship pattern, marriage not described as disharmonious). This view suggests that the meaningful aspect of defense use is not the extent to which they are used, but the particular adaptiveness of the defenses that are employed relative to each other. In the

language of profile analysis (Cronbach & Gleser, 1953), it is not the overall level or elevation of defense use, but the shape or pattern of the particular defenses employed that should be assessed.

Vaillant and others have investigated the relation between defense use and age in a number of prospective investigations (Vaillant, 1977; 1986; Haan, 1977). Vaillant's findings suggest that with the passage of years Mature defenses are used with greater frequency compared to Immature defenses. The middle years of the adult life cycle according to Vaillant, are associated with increased career commitment and responsibility and increased maturation of defenses. For example, adolescents are twice as likely to use Immature defenses compared to Mature defenses whereas young adults (20 – 35 years of age according to Vaillant) are twice as likely to use Mature defenses compared to Immature defenses (Vaillant, 1977). Vaillant's findings suggest that the most dramatic defense changes occur up to late adolescence and early adulthood. By that time, defense use is more stable with only subtle changes occur. The finding that from birth to adolescence there are changes in defense use is theoretically consistent with expectations. Readers must be cautioned, however, that defense use has been hypothesized to subtly change after adolescence, and therefore investigation of defense use should consider potential age related differences. There are a number of limitations associated with the longitudinal assessment of defenses such as selective sampling and age and gender biases (e.g., some of Vaillant's findings are taken from a small sample of Harvard University males selected in 1937). Thus readers must be cautioned when extrapolating from theoretical and empirical data relating to defense use change with age. Future investigations would benefit from the inclusion of a large age range of both genders to ensure that theoretical expectations regarding defense use and age are empirically validated. For example, poor defense use is thought to negatively impact mental and physical health, yet this is rarely tested across large age spans.

Possible Mechanisms Though Which Defenses May be Related to Blood Pressure

One way that defenses may relate to blood pressure is through the activation of the central nervous system. According to this model, defenses promote blood pressure increases by interfering with the central nervous system regulation of neuroendocrine and

cardiovascular activity (Jamner & Schwartz, 1986; Jorgensen, Johnson, Kolodziej, & Schreer, 1996), and thus result in a pattern of hyperreactivity to stress (Rutledge & Linden, 2000). Elevated stress reactivity patterns among defensive persons may be the pathway through which sympathomedullary or hypothalamic-pituitary-adrenal axis activity could lead to temporal blood pressure changes (Rutledge & Linden, 2000). This model through which the relation between defenses and blood pressure is thought to work has been supported by much of the cross-sectional research findings on defenses, defensiveness, and blood pressure (Jorgensen et al., 1996; King, Taylor, Albright, & Haskell, 1990; Rutledge & Linden, 2000). Rutledge and Linden (2000) have recently provided prospective evidence supporting the possible causal relation between defenses and blood pressure. In their study of 127 participants they linked defensive characteristics to an increased prospective risk of hypertension even after controlling for established risk factors. Rutledge and Linden (2000) go on to state that although they were unable to test the specific physiological mechanism to explain the relation between defensiveness and hypertension that their findings lend credibility to the theory that defensiveness may be the pathway through which sympathomedullary or hypothalamic-pituitary-adrenal axis activity could dispose temporal blood pressure changes (Rutledge & Linden, 2000). They also go on to state that their findings were mediated by heightened stress reactivity levels measures at baseline, which makes the findings compatible with biopsychosocial models of hypertension development. As such, there is both cross-sectional and longitudinal evidence in support of the theoretical mechanism by which defenses and defensiveness may impact blood pressure.

Blood Pressure, Blood Pressure Changes, and Aging

Blood pressure not only changes over the day but also across the life span (Joint National Committee on Detection, Evaluation, and Treatment of High Blood Pressure, 1997). For example, the incidence and prevalence of high blood pressure is greater in geriatric populations than in adolescent or young adult populations (Joint National Committee on Detection, Evaluation, and Treatment of High Blood Pressure, 1997; Weisfeldt, Lakatta, & Gerstenblith, 1992). The higher the level of blood pressure in a person, the more likely that cardiovascular disease will develop prematurely (Braunwald,

1992). It is thought that a person's characteristic pattern of response to stressful events (e.g., defensiveness or use of less adaptive defenses) can result in increased sympathetic arousal and/or cardiovascular reactivity. It is also thought that repeated arousal and/or repeated reactivity serves as a risk factor for elevated blood pressure (or hypertension). According to this model it is hypothesized that stressful events produce an increase in blood pressure and heart rate (through the sympathomedullary or hypothalamic-pituitary-adrenal axis as stated above). It is further hypothesized that individual differences determine a person's response to these stressful events) and that some persons display a large and/or persistent increase in blood pressure (e.g., those with high defensiveness or those who use less adaptive defenses) whereas others display a small and/or shorter increase in blood pressure (e.g., those with low defensiveness or those who use more adaptive defenses). This differential response is what places certain persons at risk for the development of hypertension. These responses, over time, may play a causal role in the development of hypertension (Gerin, et al., 1999). In a meta-analytic review of elevated blood pressure and personality (Jorgensen, Johnson, Kolodziej, & Schreer, 1996), defensive coping style was found to impact upon blood pressure. As such, defense use is thought to impact upon blood pressure by influencing how persons adapt and deal with the stressful events in their lives. Across the life span the repeated use of adaptive defenses in response to stressful events should only provoke very short-term blood pressure elevations that may lead to very small upwards drift in resting blood pressure. Conversely, those who repeatedly resort to maladaptive defense use in response to stressful events should, across their lives, have larger upward drifts in resting blood pressure. Thus, adaptive defense use may not yet predict lower blood pressure in younger samples because the damage done by bouts of large and/or long blood pressure reactivity may not yet have occurred. However, in older samples, relations between defense use and blood pressure may be apparent.

Current Investigation

I tested the relation between adaptive defense use and blood pressure in men and women at differing ages. Similar to Vaillant (1977; Vaillant & Gerber, 1996), I used an

observer method to assess defense use (the Defense-Q), thereby avoiding some of the limitations associated with self-report instruments. As well, since many of the previous studies have used convenience samples I chose to use an age- and gender-stratified population-based sample. Many previous studies have also failed to consider age when assessing the relation between defense use and blood pressure. These studies have either assumed that defense use is consistent in different ages (a theoretical position that has not been completely empirically validated) or have chose to ignore age. In order to assess the impact of age on defense use and blood pressure I ensured that the participants sampled a wide range of ages.

Methods

Participants were randomly selected from the 1995 Nova Scotia Health Survey (NSHS95; MacLean et al., 1996). The NSHS95 is a population-based, prospective survey implemented by Heart Health Nova Scotia in partnership with the Nova Scotia Department of Health. The NSHS95 study was designed to estimate the health status of Nova Scotians for selected hypertension, cardiovascular disease, and health indicators.

Sampling

A sample of 5,578 persons was drawn from the provincial medical insurance registry based on an age- and gender-stratified, probability sample designed by Statistics Canada. It was representative of the Nova Scotian population with respect to age, gender, and geographic location. The sample consisted of non-institutionalized Nova Scotians aged 18 and over whose names were listed in the provincial medical insurance register. The medical insurance register had been updated in 1993, and virtually all citizens of the province are enrolled with the exception of active military personnel, those living on First Nations reserves, and those who have resided in the province for less than three months.

Response Rate

Of the 5,578 people selected, 83% were located (MacLean et al., 1996). Persons could not be found for different reasons including incorrect address, death, and failure to respond to repeated attempts at contact. Three percent of those located were screened out because they were pregnant or breast feeding, or because of serious mental or physical

disabilities (i.e., deemed mentally incompetent or physically unable to answer questions by a registered public health nurse). Of those located and eligible, 72% (3,227) volunteered to complete the home visit (where the three blood pressure readings were obtained) and of those, 82% (2,658) agreed to complete the clinic visit. At the clinic visit, 78% (2,076) of those attending agreed to complete the video recorded Expanded Structured Interview and again have their resting blood pressure obtained three times.

Participants

Approximately 30% of all those participants completing the entire NSHS95 protocol were selected for inclusion in this investigation (355 men and 312 women). Because antihypertensive medications reduce blood pressure levels, analyses involving blood pressure used only those participants not on antihypertensive medications (276 men and 222 women). Participants had a mean age of 46.9 years. Demographics for this sample can be found in Table 1.

Measures

Expanded Structured Interview for Defense Assessment (ESI)

The ESI (Hall et al., 1998) is a 12- to 15-minute, structured, interpersonally stressful interview designed to assess emotional responses, coping styles, and behaviors across a number of commonly experienced stressors from which defense use is rated. The ESI is based on Rosenman's original Structured Interview (1978), however, we have added a number of questions designed to assess defense use, as well as anger expression. The questions deal with occupational and academic interactions, expression of emotions, competitiveness, and interactions with others. The questions sample a wide range of activities and behaviors and have been used as the basis for assessing defense use in previous studies (Davidson & MacGregor, 1996).

Defense-Q

What the Defense-Q measures. The Defense-Q assesses the relative use of 25 defenses (see Table 2). To help readers relate the Defense-Q choice of defenses to other contemporary and historical lists, I have cross-indexed the list of defenses with those provided in the proposed future axis of the Diagnostic and Statistical Manual of Mental

Disorders, third edition, revised (DSM-III-R; American Psychiatric Association, 1987) and the Diagnostic and Statistical Manual of Mental Disorders fourth edition (DSM-IV; American Psychiatric Association, 1994). Some definitions have been modified slightly from those provided by other authors in order to achieve acceptable coder agreement and to differentiate between conceptually similar defenses that have been difficult to differentiate (e.g., Rationalization and Intellectualization). To provide the reader with an example of how a defense is coded, Table 3 provides a coding example for Sublimation.

How the Defense-Q is used. The Defense-Q is a Q-sort instrument (Stephenson, 1953) and is based on a system of rank ordering. Each defense is represented by one card (25 cards for 25 defenses), and defenses (cards) are sorted into seven piles from least characteristic to most characteristic. The number of defenses placed in each category (e.g., most characteristic) is predetermined. For each participant, one defense is selected as most characteristic, two as quite characteristic, five as somewhat characteristic, nine as neither characteristic nor uncharacteristic, five as somewhat uncharacteristic, two as quite uncharacteristic, and one as most uncharacteristic. All 25 defenses are rated for each participant on the basis of available clinical material, in this case the ESI. The “forced choice” aspect of the Q-sort methodology approximates a normal distribution and ensures that an identical set of criteria is applied to each participant.

The Observational Defense-Q as an Instrument to Assess Defense Use. The Defense-Q provides an ipsative approach to assessing the pattern of a person’s defense use. The ipsative nature of the Defense-Q precludes the meaningful assessment of a person’s level of defense use because the level is constant across the 25 defenses assessed. Thus, the focus of the Defense-Q is on the pattern of defense use, or which defenses a person uses most and least frequently (see Figure 1). Because the pattern of a profile is an arbitrary function of the ordering of the defenses on the horizontal axis of the profile, no meaningful absolute index can be created of a profile’s pattern in isolation (Chaplin & Panter, 1993). Instead, the pattern of a profile can only be indexed by comparing it to another profile (Chaplin & Panter, 1993; Cronbach & Gleser, 1953). I elected to construct a comparison profile based on a theory of defense use derived from prominent writers and committees in the area of defenses. According to Vaillant (1977),

mature or adaptive defenses are employed

... to keep affects within bearable limits during sudden life crises (e.g., following a death); to restore emotional balance by postponing or channeling sudden increases in biological drives (e.g., at puberty); to obtain a time-out to master changes in self-image (e.g., following major surgery or unexpected promotion); to handle unresolved conflicts with people, living or dead, who one cannot bear to leave; and to survive major conflicts with conscience (e.g., killing in wartime, putting a parent in a nursing home; Vaillant, 1977, p.10).

But which defenses are adaptive (and can help protect the person) and which are maladaptive? Based on Anna and Sigmund Freud's original idea that defenses can be arranged on a continuum of adaptation, and Vaillant's extensive theoretical and empirical work relating defense maturity to both physical and mental health, I constructed a Prototypical Adaptive Defense Profile (ADP). The prototypical ADP was constructed from the theoretical accounts of Kernberg (1967; 1975), Anna Freud (1966), Sigmund Freud (1894/1962; 1926/1962; 1926/1950), Vaillant (1971; 1977; 1992; 1993), and the glossary of technical terms of the DSM-III-R and DSM-IV (American Psychiatric Association, 1987; 1994). Eight coders read these accounts and then independently constructed a prototypical ADP with the Defense-Q. The average correlation among these coders' constructed Defense-Q profiles was .92. Where disagreements existed, (primarily in whether items should be placed in the 'neither characteristic nor uncharacteristic' pile or the 'slightly uncharacteristic' pile) I averaged the rank for the item and placed it in the rank closest to the averaged rank. The ADP is shown in Figure 1.

To derive each person's score for adaptive defense use, the similarity of a person's Defense-Q profile to the ADP was assessed (Block, 1978; McKeown & Thomas, 1988). The similarity between a participant's Defense-Q profile and the ADP was indexed with a within-subject correlation computed across the 25 defenses in the profile. This correlation represents the degree to which persons are similar in their defense profiles to the ADP, with -1 being perfectly dissimilar (maladaptive) and 1 being perfectly similar (adaptive). These single scores allow for a summary of the adaptiveness or

maladaptiveness of the typical defenses used by each person. Validity for the ADP score has been demonstrated in previous studies (Davidson et al., 1999).

Blood Pressure

Resting systolic and diastolic blood pressure was assessed by a registered nurse using a manual random zero sphygmomanometer (Hla, Vokaty, & Feussner, 1986; Wright & Dore, 1970). Blood pressure was obtained three times during a home visit and four times during a clinic interview. The second and third readings from the home visit and the clinic visit were averaged together to create a resting systolic and diastolic blood pressure measure. The first reading from each setting was not employed to ensure that participants were acclimatized to the unfamiliar setting and so were not providing erroneously high blood pressure readings. For example, transient factors such as temperature change and noise level can result in blood pressure readings that are not indicative of typical blood pressure levels (Mann, 1986). To try and ensure that the nurses were reliably assessing blood pressure, nurses whose blood pressure readings contained more frequently than expected last digits ending in a 0 or 5 (e.g., 155 over 95) were not used in the analyses. That is, nurses who demonstrated a significant terminal digit preference of 0 or 5 were not use. This procedure is consistent with that used by other researchers assessing blood pressure assessment reliability and from previous findings showing that terminal digit preference is source of blood pressure unreliability (Hla et al., 1986).

Procedures

NSHS95 Procedures

A group of 29 public health nurses took part in a five-day training session to learn the techniques for contacting participants and collecting data. At the home visit, in addition to taking three resting blood pressure readings, each separated by 5 minutes, the nurses recorded the participants' responses to various questionnaires requiring, on average, 1.5 hours to complete. At the conclusion of the home visit, a clinic visit was arranged for the participant. At the clinic visit, participants again had their resting blood pressure assessed three times each separated by 5 minutes, Additionally, participants underwent the video-recorded ESI (Hall et al., 1998) which was later coded for defense

use, and completed a number of anthropomorphic measures (e.g., weight, height, waist to hip ratio). Participants also completed additional questionnaires at this time and had a final blood pressure reading taken to ensure they had returned to baseline.

Interview Quality Control

After the training session, each nurse completed ten practice ESIs, which were rated on five quality control measures (elaborations, empathy, length, presentation, and overlap; MacGregor, Davidson, & MacLean, in press). Written and oral feedback was provided to each ESI interviewer after the practice ESIs, and nurses only began data collection when their ESI interviewing skills were considered acceptable. During the NSHS95 data collection, a random 5% of each nurse's ESIs were coded for quality control. Oral feedback was provided throughout data collection to ensure that all interviewers maintained adequate ESI administration competence.

Coders

There were 26 trained coders for this study. All coders attended a class on defenses and Defense-Q coding, and were provided with a technical manual for assessing defenses using the Defense-Q (MacGregor & Davidson, 1998). After learning about each defense and how to use the Defense-Q, coders watched 10 interviews with the first two authors who discussed which defenses each interviewee was exhibiting. Coders then independently watched and rated 30 practice interviews for defenses, and coder agreement was determined. In previous studies, coder profile agreement, as assessed by a Pearson correlation, has been found to range from .63 to .76 ($M = .69$) in normal samples, and from .31 to .93 ($M = .72$) in a psychiatric sample (Davidson & MacGregor, 1996; Davidson et al., 1999). All coders who did not achieve acceptable reliability (.65 or above) on the practice interviews were retrained before undertaking coding for this study (see Davidson & MacGregor, 1996, for a discussion of Defense-Q coder reliability). During the coding phase, one reliability coder coded a random 10 ESIs that had already been coded by each coder. Defense coders with low profile agreement with the reliability coder had their data discarded, and these ESIs were recoded by a reliable coder. This process of checking reliability continued until all 667 ESIs had been coded for defense

use with the Defense-Q.

Data Analysis

The similarity between a participant's Defense-Q profile and the ADP was indexed with a within-subject correlation computed across the 25 defenses in the profile and subtracted from one (Cronbach & Gleser, 1953; Block, 1978; McKeown & Thomas, 1988). I then used this value (the Adaptive Defense Profile Similarity Score) as an index of defense use in all analyses.

Results

Reliability of the Blood Pressure Measures

Two resting blood pressure readings were obtained on each of two days for a total of four blood pressure readings. As I was interested in taking the average of all four readings to provide a more stable measure of blood pressure (Llabre, Spitzer, Saab, Ironson, & Schneiderman, 1991), I first examined the intercorrelations between the readings obtained at the home visit and those obtained at the clinic visit. Treating each reading as an item, I used Cronbach's alpha to determine generalizability of the readings. For systolic blood pressure, the intraclass correlation was .79, and for diastolic blood pressure it was .69, indicating an acceptable level of generalizability. Cronbach's alpha for all four systolic blood pressure readings was .93, with no individual reading being an outlier. For diastolic blood pressure the Cronbach's alpha for all four readings was .89, with no individual reading being an outlier.

The correlation between systolic blood pressure and diastolic blood pressure was 0.59 ($p < .001$). Both systolic and diastolic blood pressure are individually indicators of hypertension (Menotti, Seccareccia, Giampaoli, & Giuli, 1989). As well, systolic and diastolic blood pressure are used as clinical markers of hypertension (as opposed to mean arterial pressure which is a measure of the mean level of pressure during the cardiac cycle; Mentotti et al., 1989). As such, analyses were conducted separately on both systolic and diastolic blood pressure.

Reliability of Defense-Q Coding

We tested the reliability of our coders on a subset of 30 practice ESIs that all coders had coded. Treating coders as items, the Cronbach's Alpha was .91, which was considered acceptable.

Adaptive Defense Use, Age Strata, Gender, and Resting Blood Pressure

ADP scores ranged from -.57 to .75 ($M = .29$), indicating a large range of defensive functioning.

To understand the demographic correlates of ADP an Analysis of Variance was performed with age strata, gender, and age strata by gender, predicting ADP scores. ADP average scores for each of the two gender and three age strata (18-34, 35-64, 65+ years) are presented in Table 4. Analysis of variance results revealed that there was a significant main effect for the age strata ($F(2, 661) = 4.15, p < .05$). An omnibus test of group differences using a Tukey Honestly Significant Difference correction revealed that the 18-34 year age strata ($M = .26$) was not significantly different from the 35-64 year age strata ($M = .29$) but was significantly different from the 65+ year age strata ($M = .33; t = -2.76, p = .01$). Using the same procedure, the 35-64 year age strata was significantly different from the 65+ year age strata ($t = -1.77, p < .05$). There was no significant main effect for gender, nor was there a significant interaction between age and gender.

Next, to test the impact of defense use on blood pressure across different ages, separate hierarchical regression analyses were conducted with SBP and DBP as the dependent measures. To control for the possible confounding effect of hypertensive medication on blood pressure, all persons using hypertensive medications ($N = 169$) were removed from subsequent analyses leaving 498 participants. Age was dummy coded to compare the 65+ year age strata to both the 18-34 year age strata and the 35-64 year age strata. A second dummy code was created to compare 18-34 year age strata to 35-64 year age strata. Gender was also dummy coded (men = 1, women = 0). Age strata and gender dummy codes and ADP scores were entered on step one, all two way interactions were entered on step two, and the three-way interaction was entered on step three. For systolic

blood pressure, age strata, age strata by gender, and age strata by gender by ADP scores were all significant (see Table 5). For diastolic blood pressure, age strata, age strata by gender, and age strata by gender by ADP scores were all significant (see Table 6). The relations between ADP scores and resting systolic and diastolic blood pressure (as estimated by the regression analyses) are presented graphically for each of the three age strata for both men and women and discussed below in terms of tests of difference between slopes of regression lines (see Figures 2 – 7).

To test where the age strata by gender by ADP interaction was significant, simple slopes were analyzed (Aiken & West, 1991). Specifically, for each age strata regression slopes were tested against each other to determine where significant gender differences existed.

Systolic blood pressure.

For the 18-34 year age strata the slope of the regression line for men was not significantly different from the slope of the regression line for women (see figure 2). Men had slightly higher elevations of blood pressure than women did, but this was not significant. There was no significant interaction between gender and ADP score. For the 35-64 year age strata, analyses revealed similar findings. There was no difference between men and women in terms of the slope of the regression line, and although men has slightly higher elevations in blood pressure compared to women, this was not significant (see figure 3). For the 65+ year age strata, however, the slope of the regression line for men was significantly different from the slope of the regression line for women ($t = 1.56, p < .05$; see figure 4). Women with higher ADP scores had significantly lower elevations of blood pressure than men with higher ADP scores.

Diastolic blood pressure.

For the 18-34 and 35-64 year age strata similar finding were found for diastolic blood pressure as were found for systolic blood pressure. That is, the slope of the regression line for men was not significantly different from the slope of the regression line for women for either age strata (see figures 5 & 6), and men had slightly higher

elevations of blood pressure compared to women, but again this was not significant for either age strata. There was no interaction between gender and ADP score for either the 18-34 or 35-64 year age strata. Again, for the 65+ year age strata the slope of the regression line for men was significantly different from the slope of the regression line for women ($t = 2.29, p < .01$; see figure 7) and women with higher ADP scores had significantly lower elevations of blood pressure than men with higher ADP scores.

As can be seen in older women, higher ADP scores predict lower resting systolic and diastolic blood pressure levels.

I tested the regression slope for 65+ males to see if it was significantly different from zero and did not find a significant difference for either systolic or diastolic blood pressure.

Adaptive Defense Use, Age Strata, and Resting Blood Pressure

To better understand the defense by age interaction, subsequent analyses were performed for men and women separately. Again, to control for the possible confounding effect of hypertensive medication on blood pressure, all persons using hypertensive medications were removed from these analyses. Using the same procedure as above age was dummy coded to compare the 65+ year age strata to both the other two age strata (18-34 years & 35-64 years) and a second dummy code was created to compare 18-34 year age strata to 35-64 year age strata. Age strata dummy codes and ADP scores were entered on step one and the two-way interactions were entered on step two.

Systolic blood pressure

For men, age strata and the age strata by ADP scores were significant (see table 7). The 18-34 year age strata had significantly lower systolic blood pressure ($M = 121$) compared to both the 35-64 ($M = 126, p < .01$) and the 65+ year age strata ($M = 135, p < .001$). As well the 35-64 year age strata had significantly lower systolic blood pressure compared to the 65+ age strata ($p < .001$). The relation between ADP scores and resting systolic blood pressure for men (as estimated by the regression analyses) are presented graphically for each of the three age strata in Figures 8-10.

For women only age strata was significant (see table 8). Similar to the findings above for men, the youngest age strata had significantly lower systolic blood pressure ($M = 110$) compared to both the 35-64 ($M = 122, p < .001$) and the 65+ year age strata ($M = 133, p < .001$). Similarly, the 35-64 year age strata also had significantly lower systolic blood pressure compared to the 65+ age strata ($p < .001$).

Diastolic blood pressure

For men age strata was significant (see table 9). The 18-34 year age strata had significantly lower diastolic blood pressure ($M = 76$) compared to the 35-64 year age strata ($M = 82, p < .001$) but not compared to the 65+ year age strata ($M = 76$). The 35-64 year age strata had significantly higher blood pressure compared to the 65+ year age strata ($p < .001$).

For women age strata was also significant and the age strata by ADP scores was marginally significant ($p = .06$; see table 10). The 18-34 year age strata had significantly lower systolic blood pressure ($M = 70, p < .001$) compared to both the 35-64 ($M = 77, p < .001$) and the 65+ age strata ($M = 76$). The 35-64 year age strata did not have significantly lower diastolic blood pressure compared to the 65+ age strata. The relation between ADP scores and resting diastolic blood pressure for women (again as estimated by the regression analyses) are presented graphically for each of the three age strata in Figures 11-13.

Discussion

It has been hypothesized that chronological development results in a maturation of defense use (Cramer, 1991; Vaillant, 1977; 1992; 1993). Although Anna Freud observed that "the chronology of psychic processes [i.e., defenses] is still one of the most obscure fields of analytic theory," she still firmly believed that there was a chronology of defenses (A. Freud, 1966). Early work by Haan (1972) and Block (1971) provided longitudinal support for Anna Freud's speculations on the maturation of defenses. In Haan's Berkley studies (1972) she found that immature defenses such as Reaction Formation and Fantasy declined in use with age, whereas use of mature defenses such as

Altruism and Suppression increased with age. These findings were supported by Vaillant's Grant study of men (Vaillant, 1977), in which Vaillant found that more mature defenses were used with greater frequency with the passage of time. For example, Vaillant found that adolescents were twice as likely to use immature defenses as mature defenses; however as adults in later life, these same men were four times as likely to use mature defenses as immature ones. Although the findings of my study are cross-sectional, they are consistent with hypothesis that use of adaptive defenses increases across the life span. Young persons (18-34 years) were found to have lower use of adaptive defenses compared to older persons (65+ years). Although cross-sectional, these results support a maturation of defense use hypothesis and provide further support for previous findings suggesting that across the life span persons use more adaptive defenses.

Results suggest that in 65 + year old women, greater ADP scores are associated with lower resting systolic and diastolic blood pressure compared to 65 + year old men. It is not surprising that our results indicate that the interaction between age, gender, and ADP scores is not found until later in life. Considering the manner in which the sympathetic arousal – cardiovascular reactivity model is thought to work (e.g., cumulative effects), it is only later in life that the interaction between defense use and blood pressure would be expected to be seen (Braunwald, 1992). In fact, Linden and others (Linden, Earle, Gerin, & Christenfeld, 1996; Linden & Long, 1987) have argued that physiological recovery is as clinically important as physiological reactivity in understanding the development of hypertension. Davidson and others have also argued that recovery in the sympathetic arousal – cardiovascular reactivity model is an important feature in the development of hypertension (Davidson, Stuhr, & Chambers, in press). This hypothesis has also been investigated by Davidson and her colleagues lending support to the sympathetic arousal – cardiovascular reactivity model and the cumulative effects poor blood pressure recovery (Davidson et al., in press; Davidson, MacGregor, Stuhr, Dixon, & MacLean, in press). According to this model, increased sympathetic arousal leads to increased cardiovascular reactivity. This increased cardiovascular reactivity in turn leads to increased stress on the blood vessels and greater load on the

cardiovascular system. Over time, this increased stress leads to repeated and sustained elevations of blood pressure and repeated and sustained stress on the blood vessels. A person who uses less adaptive defenses is not as able to resolve the situation causing the arousal, and thus experiences greater cardiovascular reactivity for a longer period of time than a person who uses more adaptive defenses (and is therefore able to resolve the situation and decrease arousal). Because the effects of cardiovascular reactivity are thought to be cumulative (Linden et al. 1996; Davidson, MacGregor, et al., in press), a person using less adaptive defenses would spend more time aroused over the life span than a person using more adaptive defenses. The cumulative effect of this pattern of behavior is then seen in the development of hypertension later in the life span. This model has also been suggested by other researchers (e.g., Alexander, 1939; Diamond, 1982; Sommers-Flanagan & Greenberg, 1989) who also suggest that the chronic inhibition of negative emotions (e.g., anger, frustration) fosters a chronic activation of the sympathetic nervous system and that this chronic high state of physiological activation is thought to contribute over time to elevations in blood pressure and changes in the vasculature underlying hypertension. As indicated above, a possible pathway through which the relation between defenses and blood pressure elevations may operate is the sympathomedullary or hypothalamic-pituitary-adrenal axis (Rutledge & Linden, 2000).

Consider two persons, one 20 years old the other 70 years old. The 20 year-old is likely to have experienced fewer stressors, had fewer periods of elevated and sustained blood pressure, and had less time to suffer the cumulative effects of elevated and sustained blood pressure on the cardiovascular system than the 70 year old. Thus, it is not until late in life that the cumulative effects of less adaptive defense use on blood pressure should be seen.

How are we to understand the manner by which less adaptive defense use leads to increased sympathetic arousal and cardiovascular reactivity in the first place? Again consider two persons, one with a low ADP score (and therefore less adaptive defense use) and one with a high ADP score (and therefore high adaptive defense use). A person with a low ADP score may, for example, use less adaptive defenses such as Repression or

Denial (psychotic) more frequently. With frequent use of these defenses the affect associated with a stressful event may not be dealt with effectively and may subsequently result in increased arousal and subsequently increased sympathetic nervous system arousal (e.g., the person may try to forget the situation or deny its existence, which will subsequently lead to increased physiological arousal; Weinberger, 1990). On the other hand, a person with a high ADP score may, for example, use more adaptive defenses such as Sublimation and Humor more frequently. By using these defenses more frequently, the affect associated with a stressful event may be dealt with more effectively and may subsequently result in less increased physiological arousal. Over time, these two persons may have very different outcomes. While both persons will be aroused, the first will have more chronic and sustained arousal resulting in more chronic physiological activation which then might lead to vasculature changes leading or contributing to hypertension (Diamond, 1982; Jorgensen et al., 1996)

Weinberger (1990) has provided some evidence to support this hypothesized relation between use of adaptive defenses and reductions in blood pressure. Kiecolt-Glaser and Greenberg (1983, as cited in Weinberger, 1990) assessed male and female participants' reactions to scenes requiring assertiveness. When asked to imagine responding to the scenes, repressors had significantly higher increases in blood pressure than the control groups. As well, King, Albright, Taylor, Haskell and DeBusk (1986, as cited in Weinberger, 1990) found that in a sample of middle-aged men and women, repressors had significantly higher resting blood pressure than controls. Other researchers have also found emotional inhibition (e.g., Repression and Denial) to be associated with increases in blood pressure and skin conductance (Borkovec, Roemer, & Kinyon, 1995). It is thought that failure to effectively deal with the affect associated with a stressfully arousing event leads to increases in blood pressure and causes strain on the body. This hypothesis is further strengthened by a recent investigation by Rutledge and Linden (2000) who demonstrated that defensive characteristics were associated with an increased prospective risk of hypertension even after controlling for medical risk factors such as smoking and weight. Other researchers have found a significant relation between adaptive defense use and lower blood pressure. Vaillant and Gerber (1996) found that

use of mature defenses such as Sublimation and Humor leads to lower risk for hypertension. Given that higher ADP scores reflect the use of more mature defenses (e.g., Sublimation, Humor, or Rationalization), it would appear that persons who use more adaptive or mature defenses have lower blood pressure and have a reduced risk for developing hypertension, possibly through the mechanism of effective affect processing.

Of course there are other possible mechanisms that may explain these results as well as the sympathetic arousal – cardiovascular reactivity model. It may be that the relation between age and defense is not seen in younger ages due a restriction of range in blood pressure. Although 18 to 34 year old men as a whole have a lower mean systolic blood pressure than 65 + year old men, for example, the younger men still have a range of blood pressures ($SD = 10.9$) that are similar to that of older men ($SD = 11.4$) suggesting that there is not a restriction of range for younger age strata. My results may also be the result of genetic variables or risk factor variables that have not been considered. For example, genetic factors such as family history or salt sensitivity or risk factors such as family of origin (ethnicity), diet, or exercise. It is important that future investigations consider these variables and the impact they have on defense use. Future studies should attempt to measure and control for both genetic and risk factor variables in an attempt to better understand the potential unique role that defenses may play in understanding risk factors for increased blood pressure. As well, by measuring and controlling for these additional variables it will be possible to rule out these variables as alternative explanations for the current findings. My results may also simply reflect the fact that once a person knows they have higher than average blood pressure they behave and are characterized by observers as acting differently and as using different defenses. Thus it is important that future investigations demonstrate that defense use is not simply correlated with blood pressure, but that less adaptive defense use leads to higher blood pressure prospectively. The recent study by Rutledge and Linden (2000) provides prospective evidence for the relation between blood pressure and defenses, however, additional studies need to be conducted to lend support to their findings. Finally, there are models other than an intra-psychic model of defenses that may also explain or contribute to these findings. The model that I have been using assumes that defenses are

within the person (e.g., intra-psychic), and that they cause changes within the person (e.g., sympathetic arousal) which contribute to elevations in blood pressure and to hypertension. Considering defenses from another perspective, however, might also explain our understanding of how defenses are related to blood pressure. For example, an interpersonal model of defenses might suggest that if a person uses certain defenses (e.g., acting out) he or she will be perceived as “obnoxious, offensive, abrasive” or “distancing”. This perception by others might in turn influence the frequency or severity of the stressors that the person is exposed to. Thus it may be that a person is using less adaptive defenses but rather than contributing to their elevations in blood pressure through intra-psychic processes the defenses are contributing to their elevations in blood pressure by exposing them to a greater frequency and/or severity of stressors. This investigation is unable to distinguish between these two models of how defenses relate to blood pressure. Future investigations need to consider this as well as other possible models to better understand the mechanism by which defenses relate to blood pressure. Taken together, however, the results from this investigation lend support to the theoretical expectations that defense use should be associated with blood pressure, and provides additional empirical support for this position while correcting for some of the limitations associated with previous studies (e.g., selective samples). Identifying cross-sectional relations are an important first step in identifying mechanisms that impact blood pressure.

Interestingly, I found that it was only in 65 + year old women that greater ADP scores were associated with lower resting systolic and diastolic blood pressure, despite the fact that researchers have suggested that by age 65 years biology (physical weakening of the body) may overwhelm personality. That is, researchers have suggested that by age 65 personality characteristics (such as adaptive defense use) are no longer able to buffer against the effect of physiological aging and the breakdown of the human body (Allan & Scheidt, 1996). The results from this study, however, may also be more fully understood after looking at the literature relating to the later onset of coronary heart disease and hypertension in women. Women have a 10-year difference in mortality rates for coronary heart disease, and have later onset of hypertension compared to men (Seigman

& Smith, 1994). As well, women are less likely to receive traditional medical interventions and treatments relating to coronary disease and hypertension (Allan & Scheidt, 1996). It has been suggested that women may experience coronary heart disease and hypertension later in life due to biological sex differences (Seigman & Smith, 1994). That is, what a man might experience at age 60 years a woman will not experience until age 70 years. If this is correct then it is also possible that biology (the physical breakdown of the human body) may not overwhelm personality variables in women until a later time in life than men (e.g., age 75 years). In fact, it has been suggested that women are more biologically fit than men and may therefore experience the effects of biology later in life than men (Madigan, as cited in Stoney & Engebretson, 1994). It may also be that because women are less likely to receive medical interventions or treatments for traditionally "male" difficulties (e.g., coronary heart disease or hypertension), that women make greater use of personality variables (e.g., adaptive defense use) for the maintenance of health. As such, it may be that the impact (or protective effect) of personality variables last longer into life in women than in men. These hypotheses, however, need to be further investigated to test their validity.

It is an important finding that the relation between age and ADP score was found in both systolic and diastolic blood pressure. According to Menotti et al. (1989) researchers are often inconsistent about whether to use systolic or diastolic blood pressure as an outcome measure, or whether they use mean arterial pressure. There is some evidence that systolic blood pressure is an overall better marker of hypertension and death than diastolic blood pressure. When age is considered, however, there are conflicting findings with some suggesting that systolic blood pressure is a better predictor in older adults whereas diastolic blood pressure is a better predictor in younger adults. Thus, it is important to look at both measures of blood pressure when a wide range of ages is under investigation. Menotti et al. (1989) also indicate that the use of only systolic, diastolic blood pressure, or mean arterial pressure often appears to be an arbitrary choice. Given that there are possible age differences in the predictive ability of systolic and diastolic blood pressure it makes sense to consider both of these measures of blood pressure. In terms of mean arterial pressure, Menotti et al. (1989) demonstrate

mean arterial pressure to be better than diastolic blood pressure in predicting cardiovascular and all cause death in older men but not as good as systolic blood pressure. As well, hypertension and elevations in blood pressure are clinically judged on the basis of systolic and diastolic blood pressure and not mean arterial pressure. That is, a person could be diagnosed as having hypertension on the basis of an elevated systolic blood pressure, on the basis of an elevated diastolic blood pressure, or on the basis of both an elevated systolic and diastolic blood pressure. Persons are not, however, diagnosed as having hypertension on the basis of mean arterial pressure. Although systolic and diastolic blood pressure are highly correlated (0.60 to 0.70), and this creates problems of co-linearity, they are each meaningful indicators of blood pressure and hypertensive status and are the basis of clinical assessment.

Interestingly, when the data was analyzed for men and women separately we found two results. First, that in general there was an increase in blood pressure levels with age (as would be expected), and second that the age by ADP scores interaction was found in systolic blood pressure for men and in diastolic blood pressure for women ($p = .06$). It might be that the relation between defenses and blood pressure is expressed differently in men and women. There is some evidence to suggest that men and women do have different cardiovascular responses to stressors. For example, Stone, Dembroski, Costa, and MacDougall (1990) found gender differences in blood pressure reactivity to stressors, men had higher systolic blood pressure and women had high diastolic blood pressure. And Lawler, Wilcox, and Anderson (1996) found that men had high levels of systolic blood pressure and cardiac output in response to stressors. Although these studies did not look at the relation of defenses to blood pressure they do lend support to possible gender differences in hemodynamic responses.

Strengths, Limitations, and Future Studies

I have attempted to control for a number of possible limitations associated with previous studies. First, I attempted to eliminate possible sources of error associated with blood pressure measurement. With the use of a manual sphygmomanometer to assess blood pressure, sources of error include: Improper application and use of equipment;

expectation bias (the tendency of an observer to be influenced by prior knowledge of blood pressure readings); and terminal digit preference (the tendency of an observer to record certain numbers in preference to others, usually with a zero or five terminal digit). I sought to control for the improper use and application of equipment by employing licensed nurses to assess blood pressure. As such, all persons assessing blood pressure had previous experience and were familiar with the proper techniques to determine blood pressure (e.g., how to place the blood pressure cuff). Additionally, all nurses were part of a three-day training program where, among other procedures, blood pressure assessment was reviewed to ensure uniformity in assessment procedures. To control for expectation bias, nurses were kept blind to participants' previous blood pressure levels or history. To control for terminal digit preference, blood pressure readings were analyzed by nurse, and the blood pressure readings for those nurses who demonstrated terminal digit preference were discarded (Hla et al., 1986).

Second, I attempted to eliminate the error associated with single blood pressure measures. Whether blood pressure is assessed once, several times on the same day, or several times on several different days is another important consideration in blood pressure assessment. All of the above techniques have been used to determine baseline blood pressure levels. These different assessment techniques, however, can yield different outcomes (Suls, Wan, & Costa, 1995). As such, it is best to take two sets of readings separated by an appreciable period of time and average the readings to obtain a stable baseline measure of blood pressure (Kaplan, 1992). To obtain a stable measure of blood pressure I assessed blood pressure two different times on two different days (approximately one week apart). To ensure that our readings were reliable, analyses using both interclass correlations and Cronbach's alpha were conducted. Results suggest that both systolic and diastolic blood pressure readings were reliable and stable. The reliability of these blood pressure assessments strengthens the generalizability of my results.

Third, I attempted to use a reliable and valid measure of defense use. One of the most serious limitations associated with defense assessment is lack of coder reliability

(Vaillant, 1992). As such, it is important that any instrument used to determine defense use have acceptable coder reliability. Although the Defense-Q has previously demonstrated good coder reliability, I again determined its coder reliability for this study. Using Cronbach's alpha and treating coders as items the Defense-Q demonstrated high coder reliability (.91) for a subset of 30 practice ESIs. This again suggests that the Defense-Q is a reliable instrument. When individual ADP scores were examined, scores ranged from -.57 to .75, suggesting a range of defense use from maladaptive to adaptive. This reflects the range of ADP scores expected to be found in a general population. Rather than using a proxy measure of defense use (e.g., social desirability) or a self-report measure with questionable validity, I used an observational measure of defense use that has demonstrated reliability and some validity in previous preliminary studies.

I chose to use an observational measure of defenses to address some of the limitations, as discussed previously, associated with self-report measures. The reader is reminded, however, that the use of observational measures is only one possible method by which to assess defenses and is subject to its own limitations. With any measure it is important to operationalize the construct (defenses) under consideration, and provide an explicit as possible coding procedure for determining the presence or absence of the construct under consideration. To develop a rating system that can be reliably used by coders is difficult. Since personality traits like defenses cannot be measured in discrete units like blood pressure or temperature, the source of observer error may be larger than that associated with the measurement of constructs such as blood pressure. It is therefore necessary to develop a highly systematized training procedure and invest time in the reliable training of observers. This has the potential to make the use of observational measures such as the Defense-Q to assess defenses both difficult to develop and difficult and time consuming to train coders to use. Because observers are making inferences about unconscious processes it is necessary that the data source provide sufficient information from which to make these inferences. That is, the data source must be a representative sample of the stimuli from which the defenses will be rated. This has the potential to make observational measures of defenses time consuming to use as the data source may require considerable observation time on the part of the coder. The Defense-

Q attempts to provide an operationalized definition of defenses along with information on how to code defenses. In preliminary studies reliability has been demonstrated (Davidson & MacGregor, 1996), however, these results need to be replicated using other samples and other coders. The stimuli from which defenses are rated (e.g., ESI) is designed to be a short ecologically valid data source. Preliminary studies have demonstrated that when using the ESI, defenses are predictive of theoretically expected outcome measures (e.g., depression; Davidson et al., 1999). These results also need to be replicated with other coders and other outcome measures. And, to further demonstrate the validity of the ESI, the relation between defenses rated from the ESI and defenses rated from alternative data sources (e.g., video-recorded psychotherapy sessions or initial assessment interviews) need to be investigated. Additional studies looking at both the convergent and discriminant validity of the Defense-Q would allow us to better support the Defense-Q as a measure of defenses. Studies need to be conducted comparing the Defense-Q to other observer report measures of defenses in terms of theoretical expectations, and in terms of existing empirical findings. Although such studies were not part of the current investigation they would add considerably to the validity of the Defense-Q, to our understanding of defenses, and to our understanding of the relation between the Defense-Q as a measure of defenses and blood pressure.

Fourth, I attempted to correct for the limitations associated with convenience samples by using a population-based sample of community adults. This reduces the potential for non-generalizability and enhances the ecological validity of these findings. Although the incremental validity of ADP scores for predicting both systolic and diastolic blood over gender, age, ADP score, and all two-way interactions is small ($R^2 = 2\%$), ADP scores do capture a unique amount of the variance associated with systolic and diastolic blood pressure levels. Over 95% of all cases of hypertension have unknown etiology (American Heart Association, 1999) and in a recent investigation only approximately 40% of the variance associated with systolic blood pressure was explained by medical risk factors (Davidson et al., in press). It also must be remembered that even small effect sizes in large samples can translate into many people with increased risk for hypertension. And given that this sample was a population-based sample the relation

between ADP score and blood pressure has the potential to meaningfully add to our understanding of elevations in blood pressure. As such, defense use appears to be a factor worthy of further consideration.

The reader must be cautioned, however, to remember that the findings of this study are cross-sectional. Although they represent findings from a population sample, participants were not followed longitudinally for this study. Therefore, any conclusions about cause and effect are only speculation. The findings do, however, support those found in longitudinal investigations of the relation between defense use and health outcomes. For example, Vaillant and Gerber (1996) found that adaptive defense use (e.g., Sublimation) was prospectively associated with lower risk for high blood pressure. Our results support those of other researchers and lend support to the hypothesis that defense use is an important psychological variable in the understanding of blood pressure levels.

Future studies investigating the relation between defense use and blood pressure need to not only replicate these findings in other populations but also extend them longitudinally. While Vaillant (Vaillant, 1977; 1992; 1993; Vaillant & Gerber, 1996) has followed participants longitudinally to determine the relation between defense use and health outcomes, the sample he has been following is comprised of men, and important gender and ethnic differences may not be detected if more diverse samples are not employed. It is important to have representative samples followed longitudinally if the causal relation between defense use and health outcomes such as blood pressure is to be better understood.

Since the hypothesized mechanism by which defense use is thought to impact upon blood pressure is affect regulation, it is important to further test this assumption. While others have begun to investigate the relation between emotional disclosure and both physical and mental health the exact relation between defenses (e.g., Sublimation) and affect regulation needs to be further investigated. Also, to demonstrate a causal relation between defense use and blood pressure, it will be important to demonstrate that changing a person's defense use from less adaptive to more adaptive has the effect of

reducing blood pressure levels (both short- and long-term).

Finally, future studies using the Defense-Q may want to explore the assumption that defenses are operating at an intra-psychic (or intra-individual level). Although the model used for this investigation was an intra-psychic model it is possible that defenses may be related to outcome measures such as blood pressure through another mechanism. For example, as mentioned above defenses may be related to blood pressure because of interpersonal consequences. Future studies should explore this and other possibilities. For example, two groups of persons (those using adaptive defenses and those using maladaptive defenses) might be rated and compared on interpersonal characteristics such as supportiveness, agreeableness, openness etc. Studies such as these are necessary to better understand defenses as assessed by the Defense-Q, and to better understand what aspect of defenses and/or defensive behavior is related to the outcome measure being investigated.

Conclusions

In 1939 Franz Alexander tried to identify the psychological factors that contribute to hypertension. Since that time many researchers have investigated the relation between defense use and blood pressure. Vaillant and Gerber (1996) found that use of adaptive defenses was prospectively related to lower risk for developing hypertension. Most of the previous studies, however, have used convenience samples. I used a population-based sample and also found that adaptive defense use was related to lower resting blood pressure later in life. That is, in 65+ year old women greater use of adaptive defenses was associated with lower resting blood pressure. These results are important as they support previous findings while using a population-based sample. Given that over 95% of the cases of hypertension have an unexplained etiology, it would appear that defense use may help us understand some of the contributing factors to high blood pressure.

Footnotes

1 The term defense refers to an unconscious mode of mental functioning demonstrated by a person and not to specific behaviors, types of affect, or ideas. This use is consistent with that proposed by authors such as Ihilevich and Gleser (1986), who also consider defenses to refer to unconscious mental processes. For an alternative use of the word defense, see Cramer, 1991.

2 Although the words Immature, Neurotic, Mature, and Psychotic can have different connotations depending on the context in which they are written, Vaillant (1977) uses these terms specifically in relation to a constellation of defenses that are theoretically thought to be related in terms of psychological development and in terms of overall adaptiveness. Immature defenses include: Projection, Schizoid Fantasy, Hypochondriasis, Passive-Aggression, and Acting out. Neurotic defenses include: Intellectualization, Repression, Displacement, Reaction Formation, and Dissociation. Mature defenses include: Altruism, Humor, Suppression, Anticipation, and Sublimation. Finally, Psychotic defenses include: Delusional Projection, Denial (psychotic), and Distortion. When these terms are used it is with reference to Vaillant's work and his use of the terms. See Vaillant (1977) for a discussion of these terms.

Table 1

Demographic Characteristics of Male and Female Participants Selected from the NSHS95 Survey

Demographics	Men	Women
N	276	222
Age		
Mean	48.7	44.1
Range	18-90	18-83
Language		
English	97.5%	99.5%
French	1.1%	0.5%
Occupational level		
Executive	13.8%	6.8%
Professional	16.3%	18.9%
Technical	5.1%	4.1%
Marketing	6.9%	9.0%
Administrative Support	3.6%	18.0%
Service	10.9%	24.8%
Agriculture	7.2%	1.8%
Craft	9.8%	0.0%
Labor	18.5%	8.1%
Marital status		
Single	21.0%	22.1%
Married	68.1%	64.4%
Separated	2.2%	1.8%
Divorced	4.3%	2.7%

Widowed	4.0%	8.6%
Educational level		
High school or less	52.0%	40.5%
Some college or university	28.7%	42.4%
Completed college or university	19.3%	17.1%
Household Income		
Less than \$20,000	3.6%	2.7%
\$ 20,001 -- \$ 40,000	14.5%	12.8%
\$ 40,001 -- \$ 60,000	59.7%	67.5%
More than \$ 60,001	20.0%	17.0%

Table 2

The Defense-Q, its Historical Sources, and Relation to Lists of Defenses Published in DSM-III-R and DSM-IV

Defense-Q	Historical Origin	DSM-	
		III-R	IV
Sublimation	S. & A. Freud	x	
Rationalization	Horowitz	x	x
Humor	S. Freud	x	
Pseudoaltruism ^a	S. & A. Freud	x	
Idealization	Kernberg	x	x
Neurotic Denial	S. & A. Freud	x ^b	x
Fantasy ^c	S. Freud	x	x
Intellectualization	Vaillant	x	x
Reaction Formation	S. Freud	x	x
Displacement	S. Freud	x	x
Isolation	S. Freud	x	x
Devaluation	Kernberg	x	x
Identification with Aggressor	A. Freud		
Turning Against Self	S. Freud		
Repression	S. Freud	x	x
Grandiosity	Kohut		
Turning Against Others	Ihilevich & Gleser		
Passive Aggression	S. Freud & Vaillant	x	x
Undoing	S. Freud	x	x
Projection	S. Freud	x	x
Regression	S. Freud		
Splitting	S. Freud & Kernberg	x	x
Acting Out	Vaillant	x	x

Dissociation	S. Freud & Janet	x	x
Psychotic Denial	S. & A. Freud	x ^d	x

^aNamed "Altruism" in DSM-IV.

^bNeurotic Denial represents the more sophisticated range of the broader mechanism of Psychotic Denial.

^cNamed "Autistic Fantasy" in DSM-III-R.

^dPsychotic Denial represents the more primitive range of the broader mechanism of denial.

Table 3

Coding Example of Sublimation1. **SUBLIMATION**DEFINITION OF SUBLIMATION

Sublimation is the cathartic transformation of an impulse causing intrapsychic conflict into a socially acceptable and productive activity or behaviour. The original goal of the impulse changes to become productive. This indirect catharsis allows the ego to defend against the impulse without directly experiencing the adverse consequences associated with direct impulse expression.

PROCESS TO CODE SUBLIMATION

1. There is a threatening or anxiety provoking impulse that causes intrapsychic conflict.
2. There is an engagement in some socially acceptable and productive activity or behaviour.
3. By engaging in sublimation there is a catharsis of the impulse and the conflict is at least temporarily relieved or resolved.

CASE EXAMPLES

1. Bob misses a deadline for an important project and is reprimanded for his poor work ethic. That evening Bob starts building the deck he has postponed for weeks. The work progresses well, and by the end of the evening he has virtually forgotten how angry he was with his boss earlier in the day.
2. Every time Jane gets into a heated argument with her fiancée she seems to play her piano better and with more emotion. In fact, she even writes songs about the trials and tribulations of being in love.
3. Peter, who has recently separated from his wife, is praised by his superiors for his dedication to the company. Since his separation, he regularly works fifty-five to sixty hours a week.

4. Sarah who is uncomfortable with her aggressive and violent feelings joins a judo class. She subsequently moves to the top of her ranking within the class.

SIMILAR DEFENSE MECHANISMS AND DIFFERENTIATING FEATURES

Sublimation: The cathartic transformation of impulses causing intrapsychic conflict into socially acceptable and productive activities or behaviours.

Example: Karen feels aggressive towards John.

Sublimation as a defense: Karen teaches karate.

1. **Reaction Formation:** The cathartic transformation of impulses causing intrapsychic conflict into exaggerated and opposite impulses.

Reaction Formation as a defense: Karen thinks she loves John.

2. **Humour:** The cathartic discharge of impulses causing intrapsychic conflict through the use of humour or laughter

Humour as a defense: Karen makes fun of John.

3. **Pseudoaltruism:** The cathartic discharge of impulses causing intrapsychic conflict through helping others with similar impulses resolve their intrapsychic conflict

Pseudoaltruism as a defense: Karen helps others who are having difficulty dealing with their anger and frustration.

4. **Undoing:** The transformation of impulses causing intrapsychic conflict into symbolic gestures as a means of negating or making amends for the impulses.

Undoing as a defense: Karen constantly watches over John and makes lists of potential dangers that may befall him.

Table 4

Adaptive Defense Profile Scores by Age Strata and Gender.

	Male	Female	Both
18-34 year Age Strata	.26 (.23) (86)	.27 (.24) (90)	.26 (.23)a (176)
35-64 year Age Strata	.28 (.23) (166)	.31 (.22) (152)	.29 (.22)a (318)
65 + year Age Strata	.30 (.23) (103)	.36 (.20) (70)	.33 (.22)b (173)

Note. Means in the same column that do not share the same subscript are statistically different.

Table 5

Relation Between Adaptive Defense Use, Age, and Gender and Systolic Blood Pressure.

	<u>B</u>	<u>SE B</u>	β
Age Strata Dummy Code 1	7.34	1.80	.57***
Age Strata Dummy Code 2	6.80	1.64	.38***
Gender	4.05	2.46	.13
ADP Score	-8.37	5.26	-.12
Age Strata Dummy Code 1 x Gender	-5.09	2.08	-.32*
Age Strata Dummy Code 2 x Gender	-2.79	2.27	-.12
Age Strata Dummy Code 1 x ADP Score	-4.47	4.54	-.13
Age Strata Dummy Code 2 x ADP Score	-3.30	4.61	-.07
Gender x ADP Score	4.46	6.50	.06
Age Strata Dummy Code 1 x Gender x ADP Score	10.50	5.32	.25*
Age Strata Dummy Code 2 x Gender x ADP Score	-1.71	6.47	-.02

Note. $\Delta R^2 = .23$ for step 1; $\Delta R^2 = .02$ for step 2; $\Delta R^2 = .02$ for step 3

Age Dummy Code 1 compares 18-34 year age group and 35-64 year age group to 65+ year age group.

Age Dummy Code 2 compares 18-34 year age group to 35-64 year age group.

* $p < .05$

*** $p < .001$

Table 6

Relation Between Adaptive Defense Use, Age, and Gender and Diastolic Blood Pressure.

	<u>B</u>	<u>SE B</u>	β
Age Strata Dummy Code 1	2.72	1.16	.35*
Age Strata Dummy Code 2	4.54	1.06	.42***
Gender	1.25	1.58	.07
ADP Score	-5.97	3.39	-.14
Age Strata Dummy Code 1 x Gender	-4.23	1.34	-.43**
Age Strata Dummy Code 2 x Gender	-1.10	1.47	-.08
Age Strata Dummy Code 1 x ADP Score	-5.25	2.92	-.26
Age Strata Dummy Code 2 x ADP Score	-2.62	2.97	-.09
Gender x ADP Score	5.91	4.19	.14
Age Strata Dummy Code 1 x Gender x ADP Score	6.87	3.42	.26*
Age Strata Dummy Code 2 x Gender X ADP Score	.16	4.17	.00

Note. $\Delta R^2 = .23$ for step 1; $\Delta R^2 = .02$ for step 2; $\Delta R^2 = .02$ for step 3

Age Dummy Code 1 compares 18-34 year age group and 35-64 year age group to 65+ year age group.

Age Dummy Code 2 compares 18-34 year age group to 35-64 year age group.

* $p < .05$

** $p < .01$

*** $p < .001$

Table 7

Relation Between Adaptive Defense Use, Age, and Systolic Blood Pressure for Men

	B	SE B	β
Age Strata Dummy Code 1	2.25	1.04	.20*
Age Strata Dummy Code 2	4.01	1.57	.23**
ADP Score	-3.90	3.81	-.06
Age strata Dummy Code 1 x ADP Score	6.03	2.77	.20*
Age Strata Dummy Code 2 x ADP Score	-4.47	4.53	-.09

Note. $\Delta R^2 = .14$ for step 1; $\Delta R^2 = .02$ for step 2

Age Dummy Code 1 compares 18-34 year age group and 35-64 year age group to 65+ year age group

Age Dummy Code 2 compares 18-34 year age group to 35-64 year age group.

* $p < .05$

** $p < .01$

Table 8

Relation Between Adaptive Defense Use, Age, and Systolic Blood Pressure for Women

	B	SE B	β
Age Strata Dummy Code 1	7.34	1.80	.51***
Age Strata Dummy Code 2	6.80	1.64	.39***
ADP Score	-8.37	5.28	-.12
Age strata Dummy Code 1 x ADP Score	-4.47	4.56	-.13
Age Strata Dummy Code 2 x ADP Score	-3.30	4.62	-.07

Note. $\Delta R^2 = .24$ for step 1; $\Delta R^2 = 0$ for step 2

Age Dummy Code 1 compares 18-34 year age group and 35-64 year age group to 65+ year age group

Age Dummy Code 2 compares 18-34 year age group to 35-64 year age group.

* $p < .05$

** $p < .01$

*** $p < .001$

Table 9

Relation Between Adaptive Defense Use, Age, and Diastolic Blood Pressure for Men

	B	SE B	β
Age Strata Dummy Code 1	-1.51	0.69	.21*
Age Strata Dummy Code 2	3.44	1.04	.31***
ADP Score	-0.06	2.51	-.00
Age strata Dummy Code 1 x ADP Score	1.63	1.83	.09
Age Strata Dummy Code 2 x ADP Score	-2.46	3.00	-.08

Note. $\Delta R^2 = .08$ for step 1; $\Delta R^2 = 0$ for step 2

Age Dummy Code 1 compares 18-34 year age group and 35-64 year age group to 65+ year age group

Age Dummy Code 2 compares 18-34 year age group to 35-64 year age group.

* $p < .05$

** $p < .01$

*** $p < .001$

Table 10

Relation Between Adaptive Defense Use, Age, and Diastolic Blood Pressure for Women

	B	SE B	β
Age Strata Dummy Code 1	2.72	1.12	.32*
Age Strata Dummy Code 2	4.54	1.03	.44***
ADP Score	-5.97	3.29	-.14
Age strata Dummy Code 1 x ADP Score	-5.25	2.84	-.25 ^a
Age Strata Dummy Code 2 x ADP Score	-2.62	2.88	-.09

Note. $\Delta R^2 = .13$ for step 1; $\Delta R^2 = .01$ for step 2

Age Dummy Code 1 compares 18-34 year age group and 35-64 year age group to 65+ year age group

Age Dummy Code 2 compares 18-34 year age group to 35-64 year age group.

* $p < .05$

** $p < .01$

*** $p < .001$

^a $p = .06$

Figure Captions

Figure 1. Defense profile for two persons compared to the Adaptive Defense Profile.

Figure 2. Adaptive defense profile score and Systolic Blood Pressure in 18-34 year olds.

Figure 3. Adaptive defense profile score and Systolic Blood Pressure in 35-64 year olds.

Figure 4. Adaptive defense profile score and Systolic Blood Pressure in 65+ year olds.

Figure 5. Adaptive defense profile score and Diastolic Blood Pressure in 18-34 year olds.

Figure 6. Adaptive defense profile score and Diastolic Blood Pressure in 35-64 year olds.

Figure 7. Adaptive defense profile score and Diastolic Blood Pressure in 65+ year olds.

Figure 8. Adaptive defense profile score and Systolic Blood Pressure in 18-34 year old men.

Figure 9. Adaptive defense profile score and Systolic Blood Pressure in 35-64 year old men.

Figure 10. Adaptive defense profile score and Systolic Blood Pressure in 65+ year old men.

Figure 11. Adaptive defense profile score and Diastolic Blood Pressure in 18-34 year old women.

Figure 12. Adaptive defense profile score and Diastolic Blood Pressure in 35-64 year old women.

Figure 13. Adaptive defense profile score and Diastolic Blood Pressure in 65+ year old women.

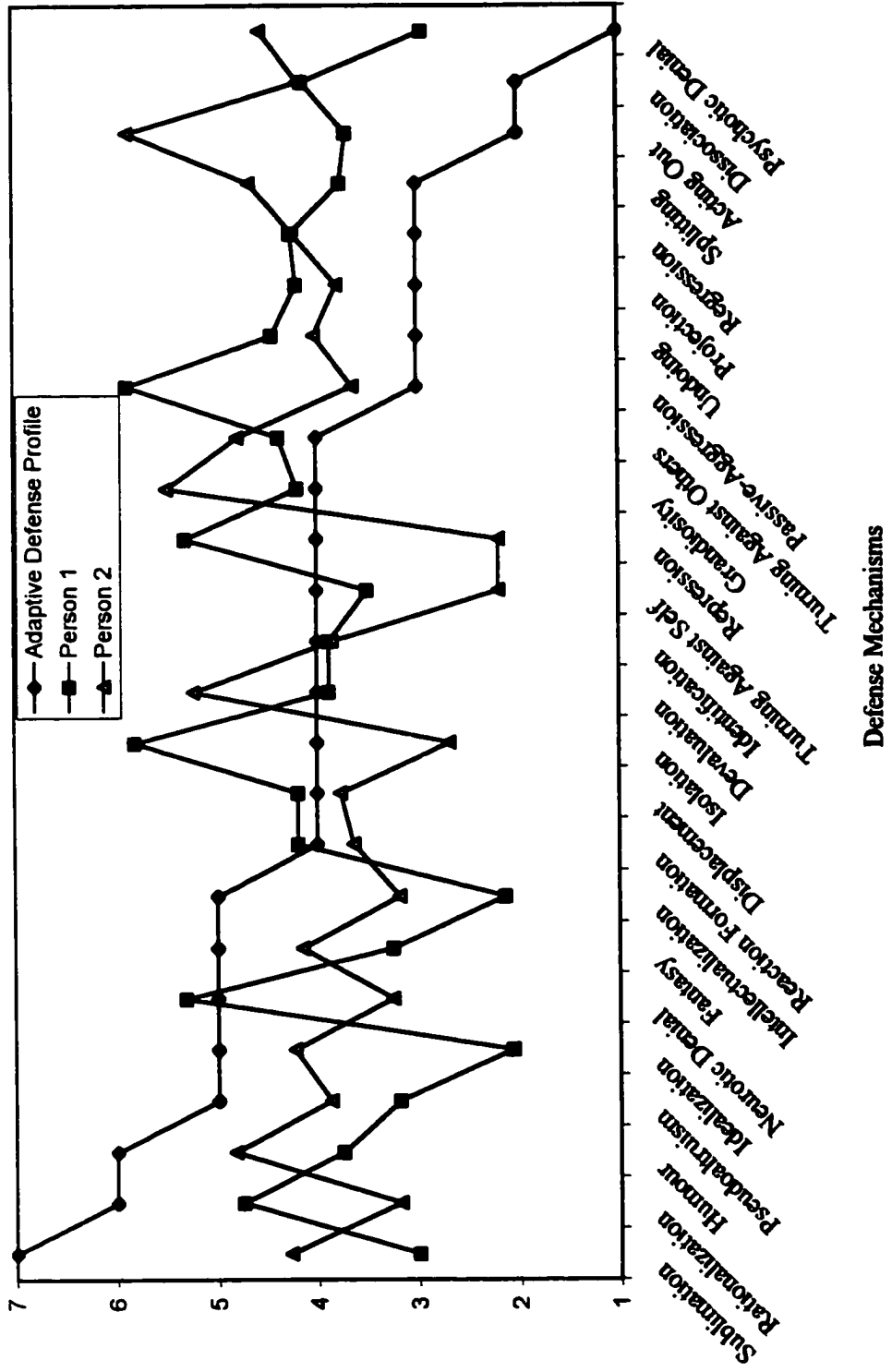


Figure 1

Defense Mechanisms

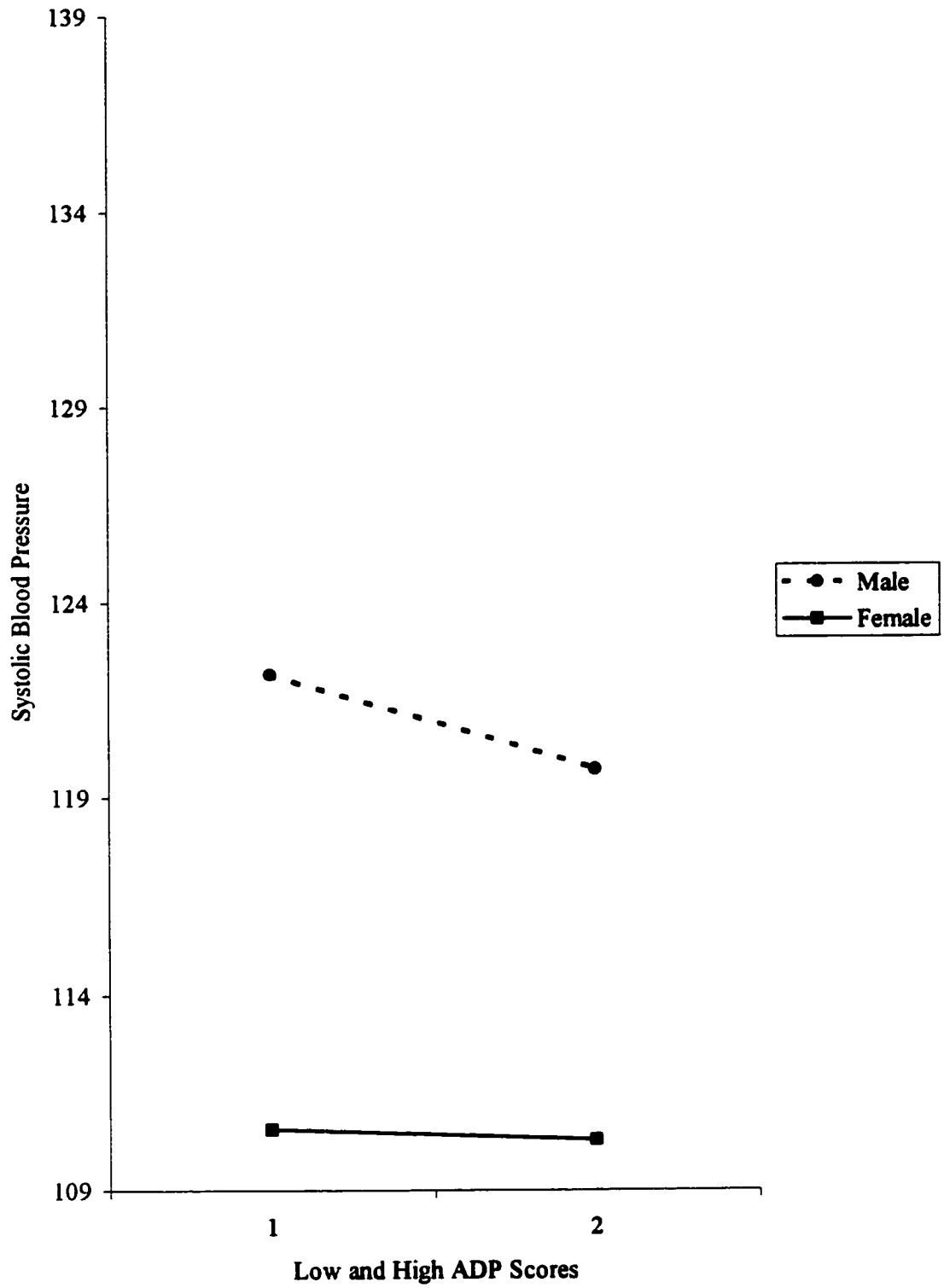


Figure 2

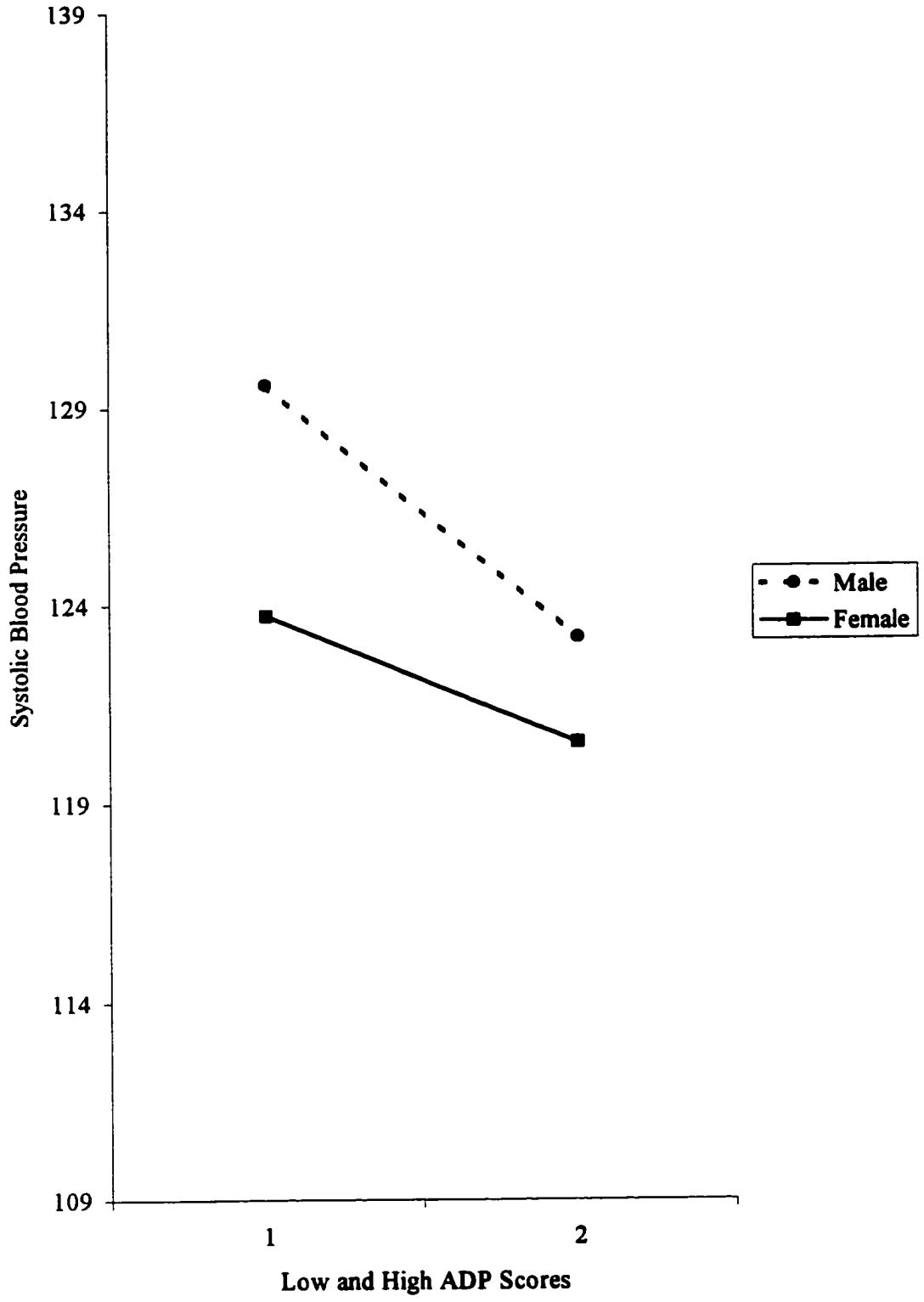


Figure 3

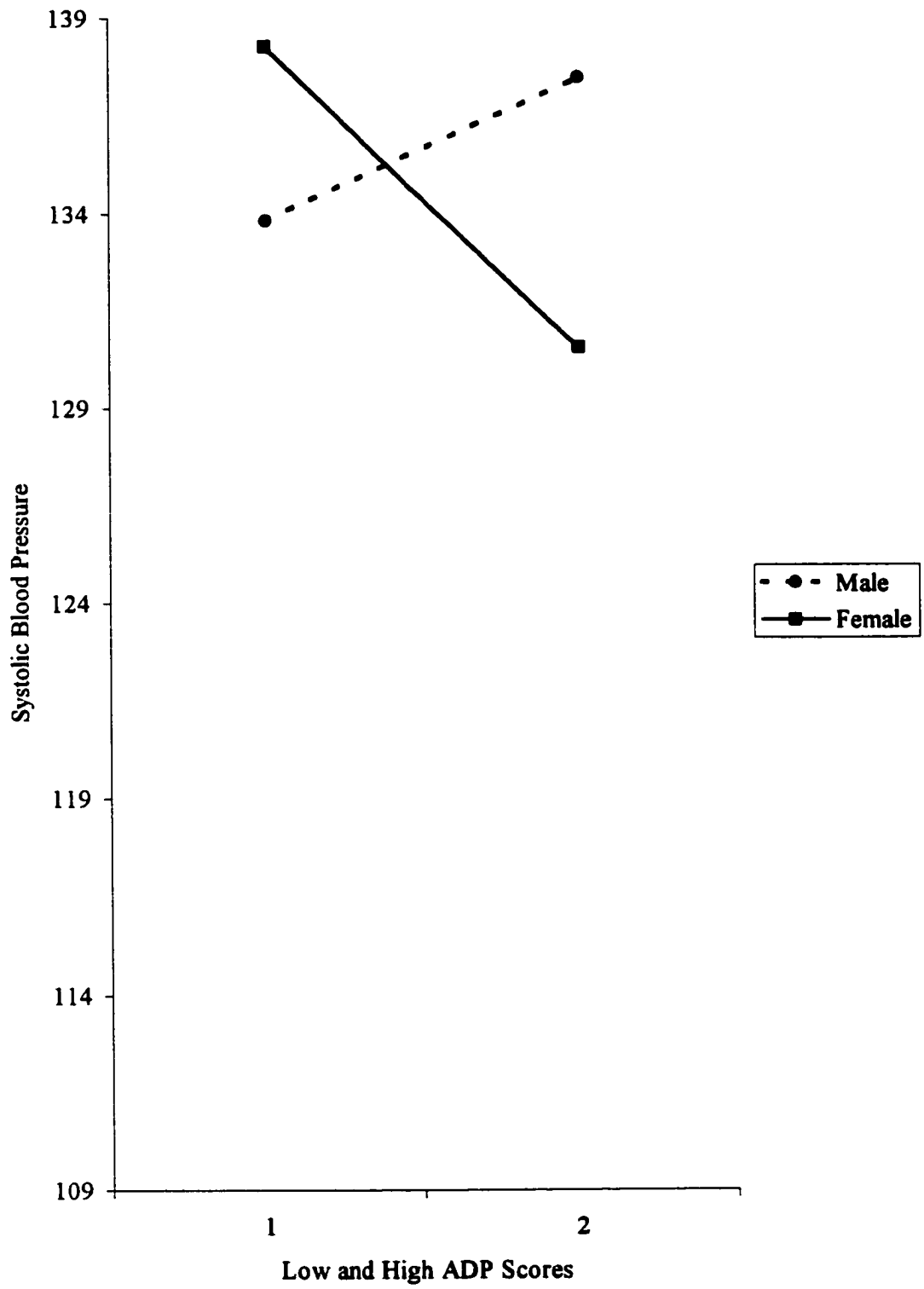


Figure 4

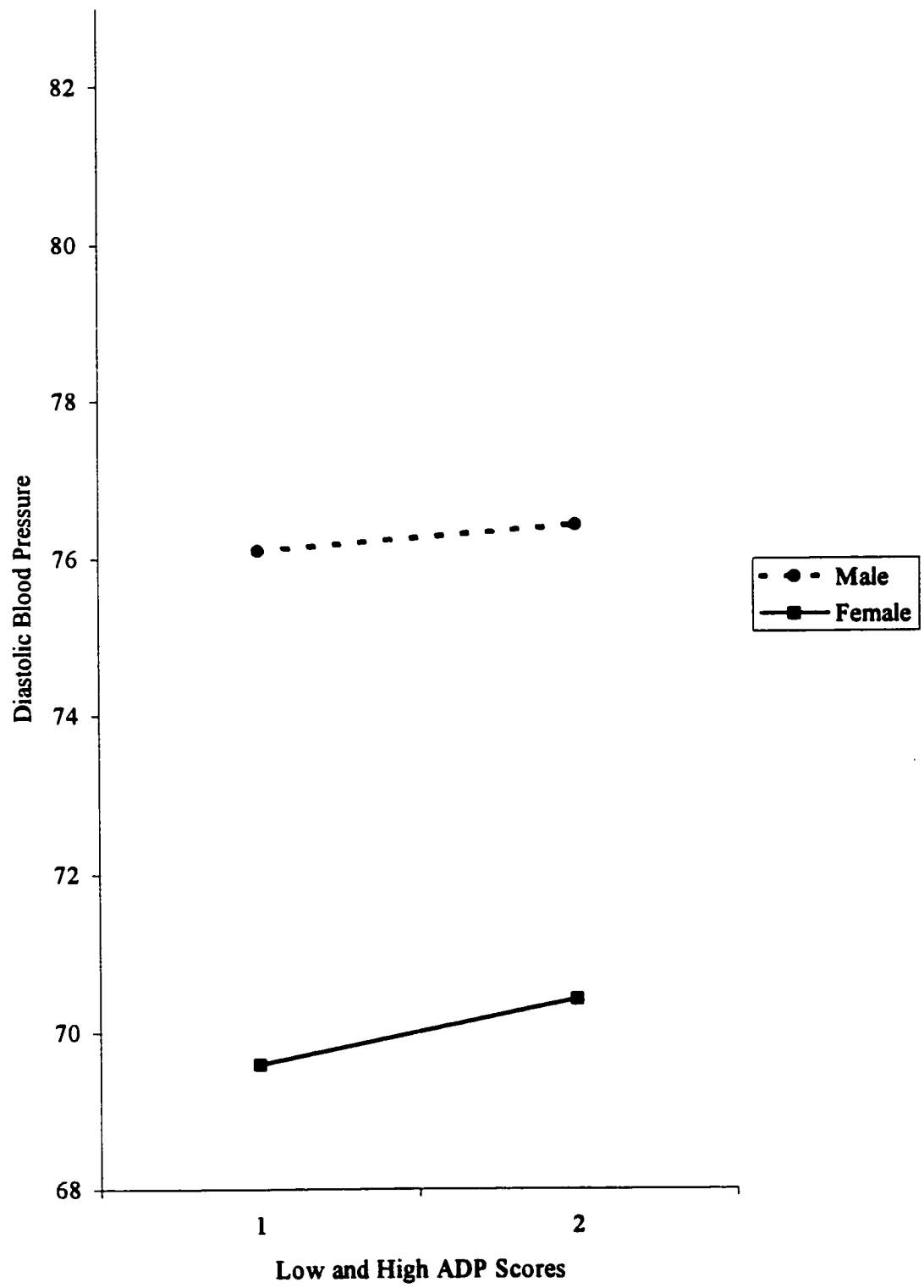


Figure 5

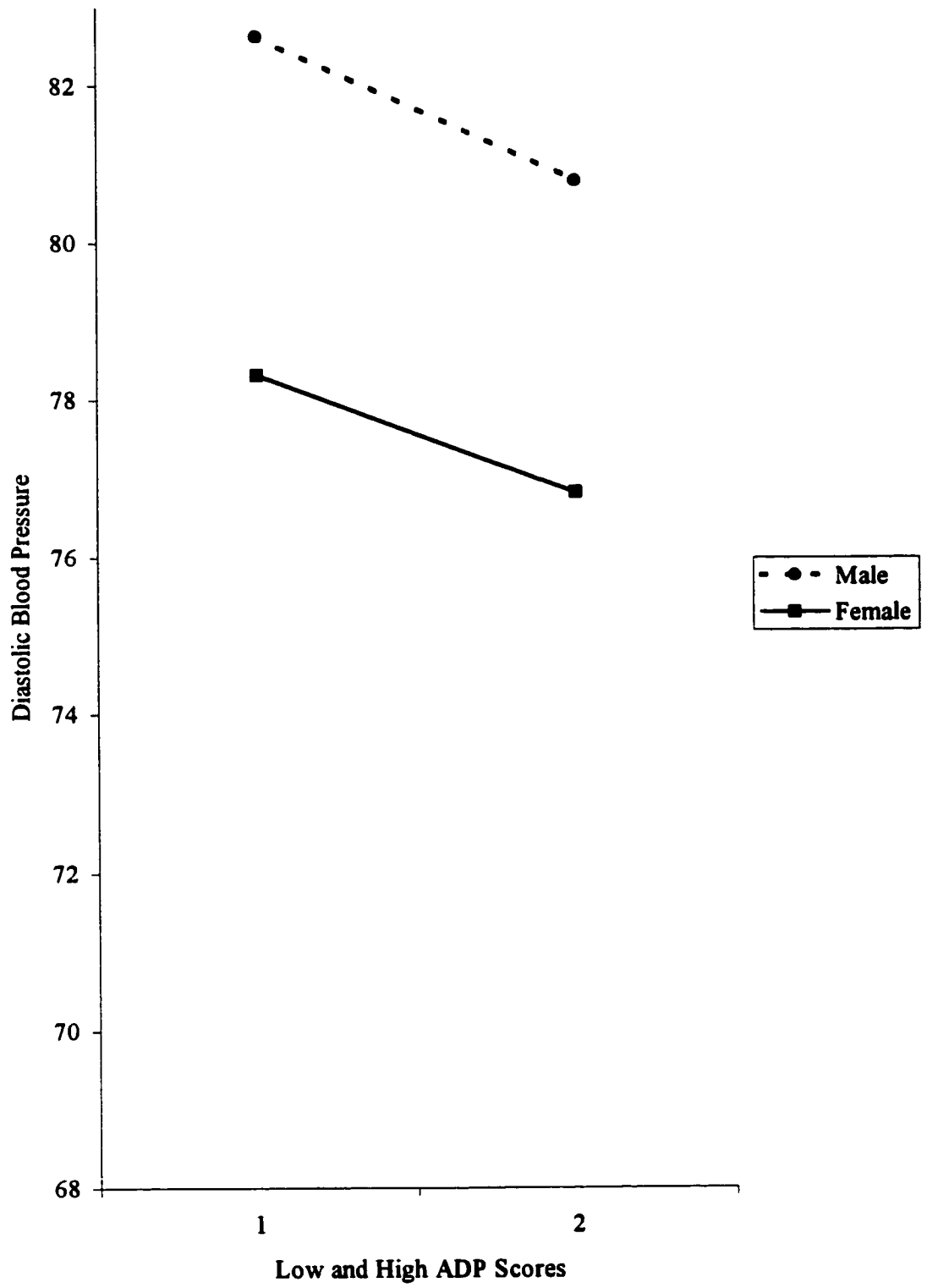


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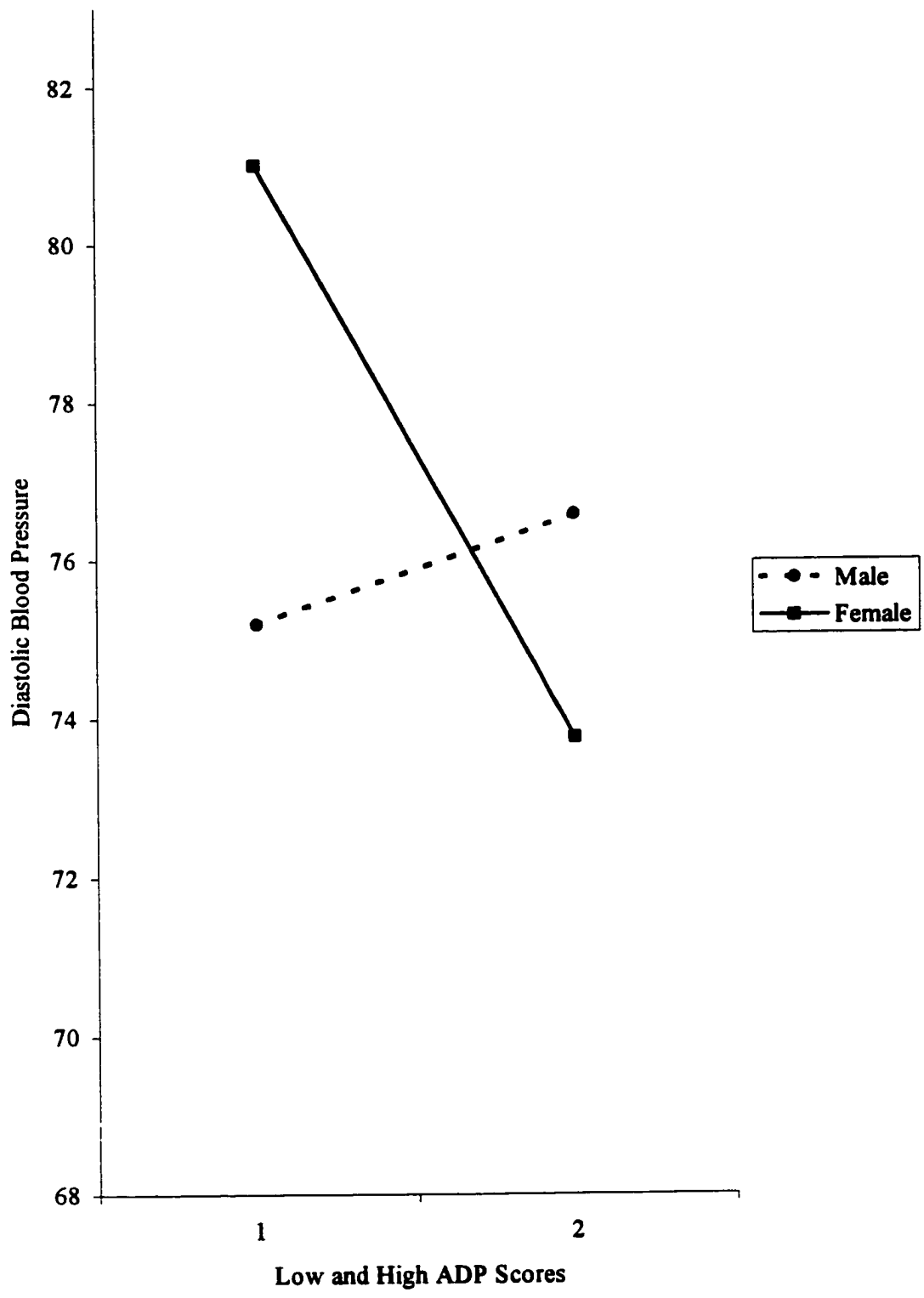


Figure 7

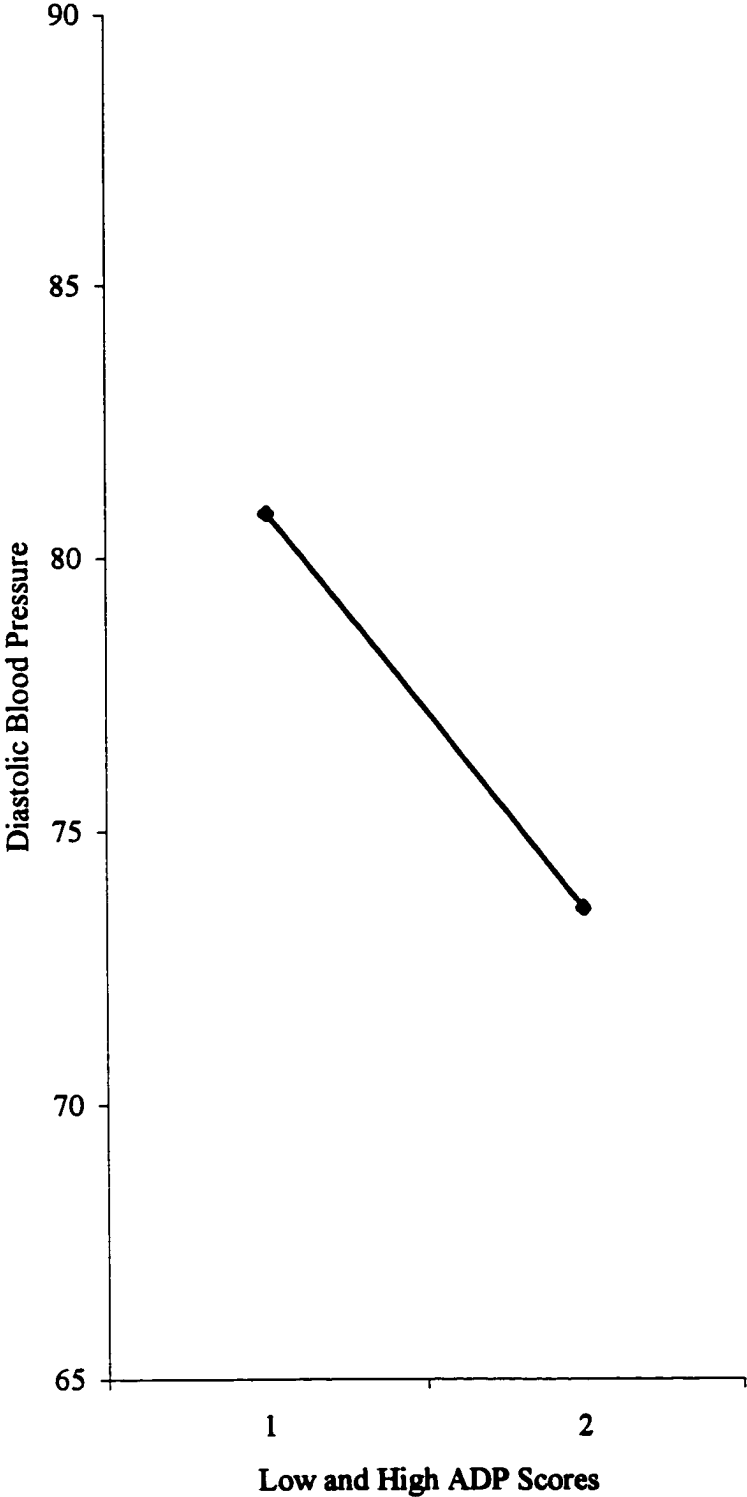


Figure 8

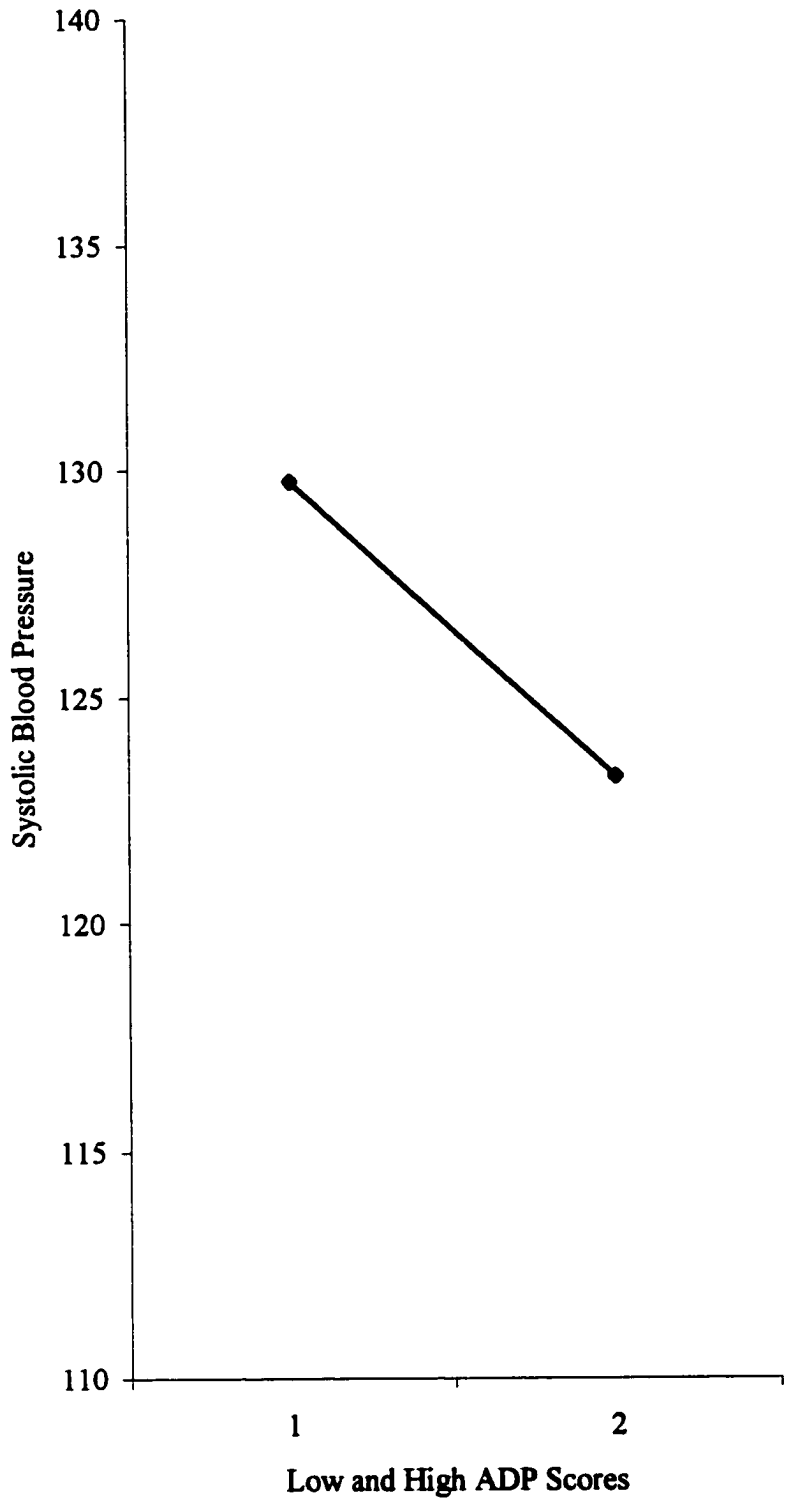


Figure 9

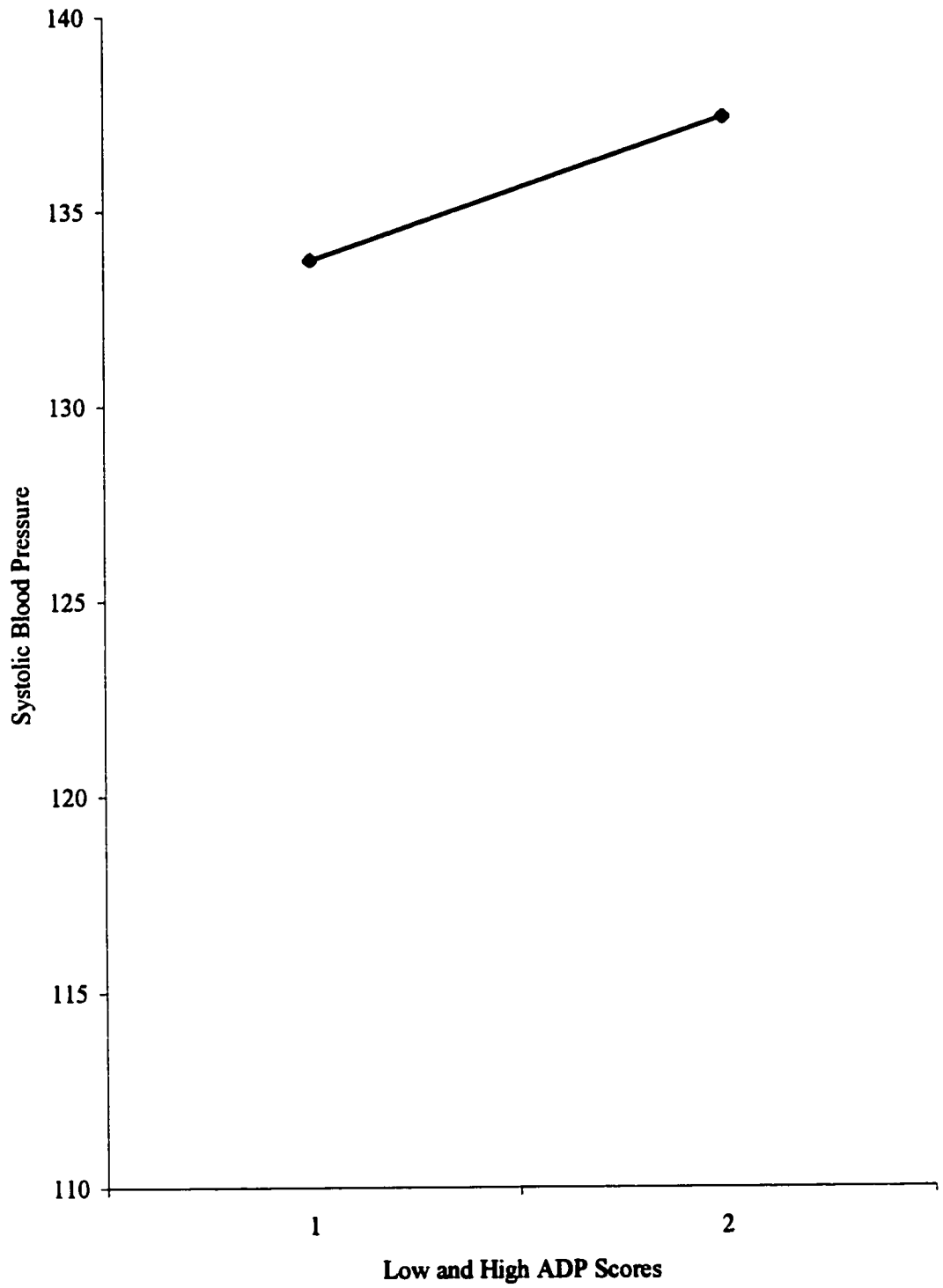


Figure10

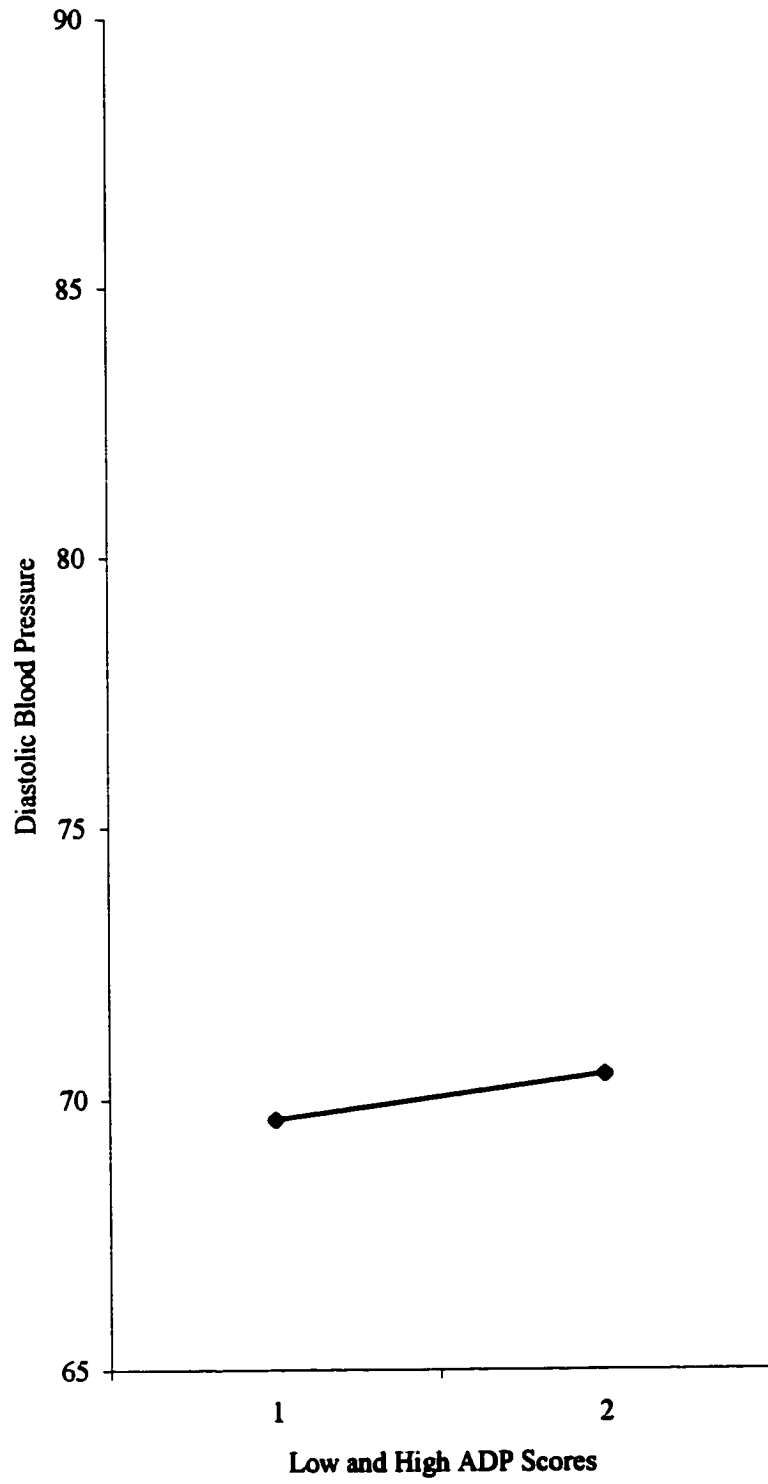


Figure 11

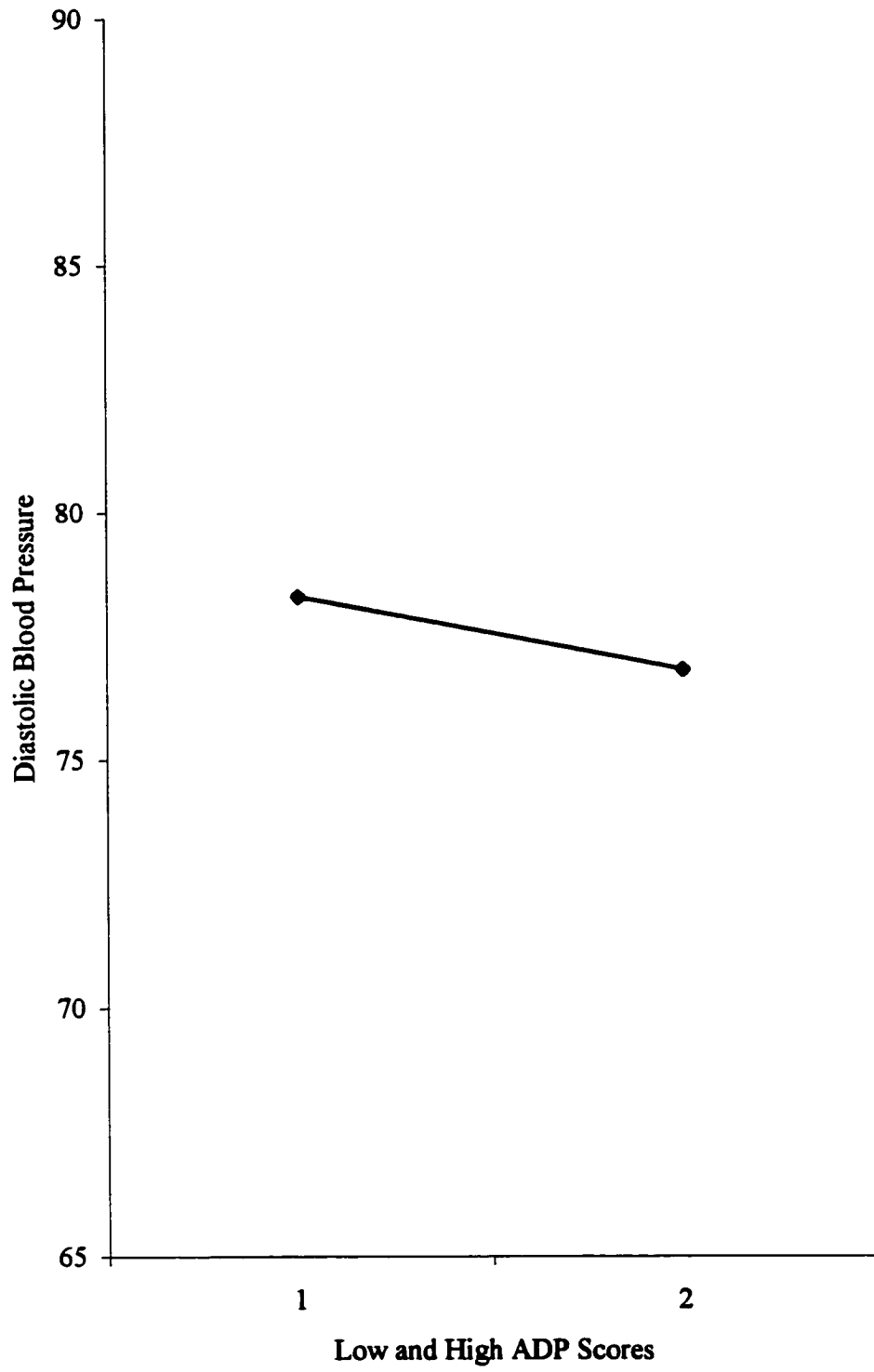


Figure 12

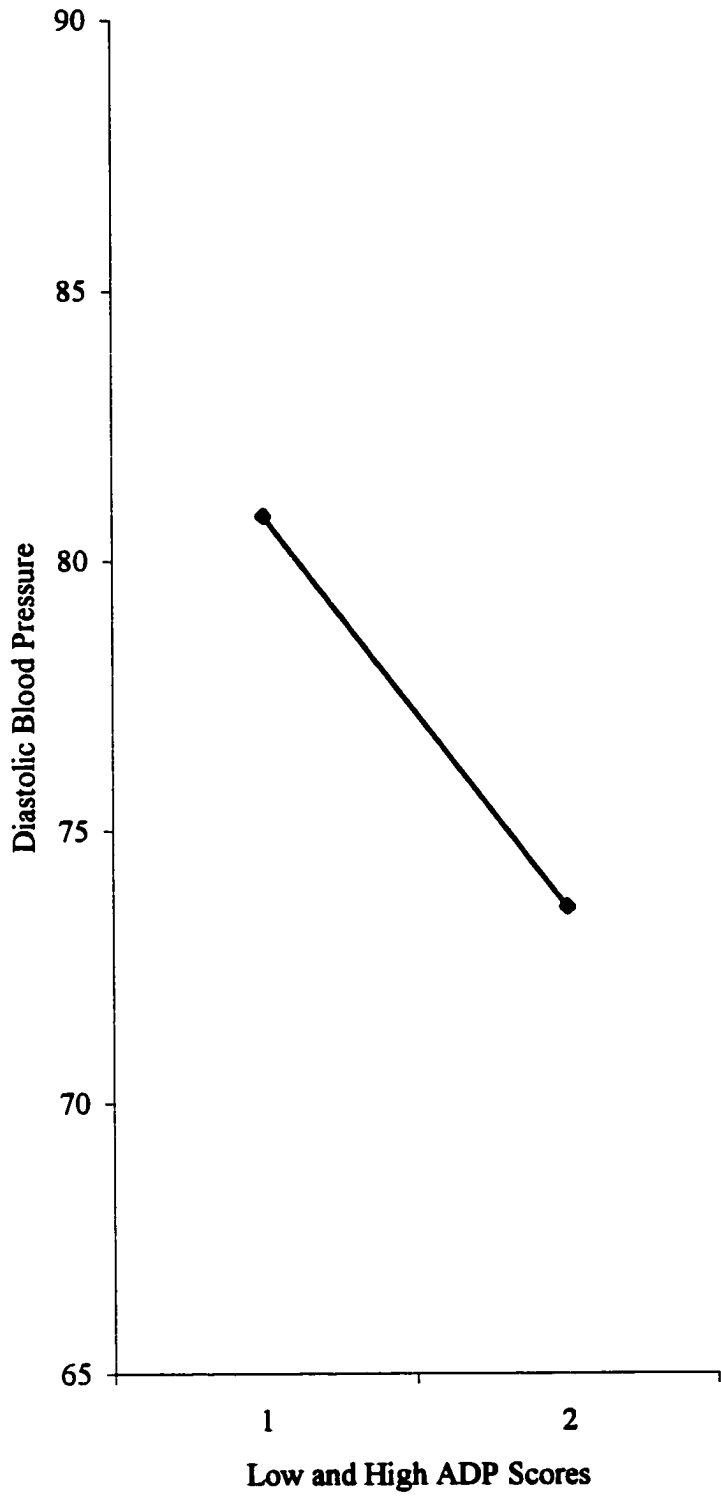


Figure 13

CHAPTER THREE

Abstract

I hypothesized that persons who use more adaptive defenses would have decreased physician health care costs as compared to those who use less adaptive defenses. From the 1995 Nova Scotia Health Survey, an age- and gender-stratified population sample, I randomly selected 667 persons for these analyses. Participants completed a videotaped Expanded Structured Interview (ESI; Hall, Davidson, MacGregor, & MacLean, 1998) and trained coders rated interviews for typical defense use using the Defense-Q (Davidson & MacGregor, 1996). I obtained physician health care costs for three months post-ESI from the provincial health insurance system, as well as self-reports of peripheral vascular disease, heart attack, and cancer. Additionally, I obtained self-reports of depression, optimism, number of days in the last year that work was missed due to illness, and whether or not a diagnosis of mental illness had ever been given for each person. Finally, I obtained nurse reports of competence. I first controlled for age, gender, and limits in daily activity imposed by medical illness. A more adaptive defense profile significantly predicted decreased physician health care costs ($\beta = -.11$, $p < .01$). Secondary analyses revealed that those persons with a more adaptive defense profile had significantly lower reports of peripheral vascular disease and heart attacks ($p = .06$). As well, these same persons had significantly lower levels of depression, higher levels of optimism, fewer number of days missed due to illness, higher nurse ratings of competence, and fewer diagnoses of mental illness. I then removed from the analysis all persons with a self-reported major medical or psychiatric diagnosis and ADP continued to predict less physician service use. Use of more adaptive defenses is related to decreased use of medical resources.

Decreased Physician Health Care Costs in Those with More Adaptive Defense Profiles

When the third edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-III; American Psychiatric Association, 1980) was introduced, it gained widespread acceptance both in psychiatry and psychology as a clinically reliable and useful diagnostic system (Perry, et al., 1998). Because the DSM-III attempted to be descriptive, however, it was criticized as being atheoretical and of little aid in treatment planning (Karasu & Skodol, 1980). This criticism was addressed in the DSM-III-R (Revised edition; American Psychiatric Association, 1987) by including definitions of defenses in a glossary of technical terms, as a possible aid to treatment planning. With the release of the fourth edition of the DSM (DSM-IV; American Psychiatric Association, 1994), defenses became even more prominent and were placed in a specific appendix. Defenses are now being considered as a possible sixth axis (Perry et al., 1998), and many hypotheses have been proposed about the relations between defenses and mental and physical health. This investigation addresses the question of whether or not diagnosing typical defense use¹ is helpful in predicting possible decreased physician health care costs.

In a longitudinal study of the relation between defenses and adult adjustment, Vaillant found that both specific defenses and overall maturity of defenses predicted to career, social, and psychological adjustment as well as to physical health (Miller, Luborsky, Barber, & Docherty, 1993; Vaillant, 1976; 1977; 1993). Using a sample of 95 men, he found that defense maturity level predicted physical health when those using mature defenses were compared to those using immature defenses. For example, men using immature defenses were more likely to have taken 5 or more sick days per year and were also more likely to have sought medical attention. Conversely, men with more mature defenses were more likely not to be diagnosed as mentally ill, and were more likely to rate their subjective health as excellent. These results suggest that those who use more mature or more adaptive defenses are less likely to have health problems and less likely to visit physicians.

The above findings, and findings by other researchers, have led to the idea that use of defenses is related to how well a person functions in terms of mental and physical health (Cooper, 1987; Bond, Paris, & Zweig-Frank, 1994; Vaillant, 1976; 1977; 1992; 1993). Vaillant hypothesizes that use of adaptive or mature defenses such as Sublimation and Humor should serve to protect the person from poor health outcomes (Vaillant, 1977). He also suggests that use of less adaptive defenses such as Psychotic Denial should place a person at risk for poor health outcomes. I hypothesized that, over and above having more physical illness, persons with less adaptive defense use would also use medical resources inappropriately. It is this hypothesis that I sought to test in a population-based sample.

To compare the defense use of different persons, I constructed an adaptive defense use profile. Experienced clinician psychologists (2), psychodynamically trained graduate students (2), and undergraduate psychology honors students (4) who were familiar with defense theory each constructed a prototypical adaptive or mature defense profile based on the work of authors such as Kernberg (1967; 1975), Anna Freud (1966), Sigmund Freud (1894/1962; 1926/1962; 1926/1950), Vaillant (1971; 1977; 1992; 1993), and the glossary of technical terms of the DSM-III-R and DSM-IV (American Psychiatric Association, 1987; 1994). Clinicians and students were instructed to rank order defenses from most to least adaptive when constructing their profile. For example, using the works of the above authors, Sublimation would be considered adaptive (mature; Vaillant, 1971; 1977; American Psychiatric Association, 1994), and Psychotic Denial would be considered less adaptive (Vaillant, 1971; 1977; American Psychiatric Association, 1994). As such, these defenses should be placed at opposite ends of the profile. Profiles from the clinicians and students were averaged to create a Prototypical Adaptive Defense Profile (ADP; see Figure 1).

I tested the prospective relation between adaptive defense use and physician health care costs in a population sample. Analyses were first conducted with the entire sample and then removing persons with preexisting medical and psychiatric diagnoses. I

hypothesized that persons using more adaptive defenses would have decreased physician health care costs when compared to persons using less adaptive defenses.

Methods

Participants

The same participants as identified in chapter two were used for this study. See chapter two for a more detailed discussion of sampling procedures and response rate. Demographics for this sample can be found in Table 1.

Measures

In addition to the ESI and the Defense-Q as described in chapter two, the following measures were used:

Health Care Utilization

Using the socialized Canadian health care system, I calculated total physician health care costs over a three-month period for each participant. Total physician health care costs were calculated as the total number of dollars all physicians billed the provincial government for services provided to each person. This did not include any costs not directly billed by a physician (e.g., tests billed by a laboratory). As all citizens belong to the same health care provider, it is possible to assess health care utilization and cost without the confounds of multiple insurance systems or uninsured persons.

Medical Conditions Impact Scale

The Medical Conditions Impact Scale (MCIS) is a 10-item, yes/no response scale that asks for self-report of functional limitations imposed by medical conditions. This measure was developed from items included in the Nova Scotia Health Survey 1995. The MCIS assesses limitations in three domains of activities of daily living: self-care/household activities; occupational/educational activities; and social/recreational activities. Responses are summed to yield a total scale score. This score is preferable to the more commonly used, single-item, self-reported health status when attempting to quantify the general medical illness level of survey participants, because it is phrased more objectively, it covers three domains of functioning instead of one, and it is less

influenced by depressive symptom level or trait anxiety level (Ware, Brook, Davies, & Lohr, 1981).

After reviewing the criteria and considerations put forth by Ware et al. (1981), concerning health status measures, I judged that the strategy of using this measure would adequately address our interests and concerns. Measurement of functional limitations due to illness has been used in some of the most prominent research concerning health care utilization, including the Medical Outcomes Study (Rogers, Wells, Meredith, Sturm, & Burnam, 1993) and the RAND Health Insurance Study (Manning, Newhouse, & Ware, 1982).

Medical Diagnoses

Medical diagnosis was assessed by self-report. All participants were asked if a health or mental health professional had ever informed them that they had peripheral vascular disease, a heart attack, or cancer. See Table 2 for descriptive information relating to these variables.

Psychological Distress and Mental Illness

Depression was assessed by self-report using the Centre for Epidemiological Studies-Depression Scale (CES-D). The CES-D Scale was designed for use in epidemiological studies as a measure of current level of depressive symptoms. The CES-D inquires about recently experienced symptoms that are characteristic of depression. It has been used extensively, and has good internal consistency (.88) and validity (Orme, Reis, & Herz, 1986; Radloff, 1977).

Optimism was assessed by two self-report items that were added together for a single score. One item assessed how optimistic the person was about the future and the second item assessed how much the person expected things to go his or her way. These two items were taken from the Scheier and Carver's Life Orientation Test (Scheier & Carver, 1985). Each question was answered on a 5 point Likert scale with 1 representing 'strongly disagree' and 5 representing 'strongly agree'.

Number of days missed from work was gathered by self-report. Participants were asked to indicate the number of days they missed from work over the past year due to illness.

Competence was assessed by public health nurse ratings. Public health nurses who conducted the ESIs were asked to provide a rating of the participant's competence level based on her interactions with the participant during the NSHS95 study. Responses were recorded on a 5-point Likert scale with 1 representing 'barely competent' and 5 representing 'extremely competent'.

Participants were also asked if they had ever been diagnosed with a mental illness. See Table 2 for a table detailing descriptive information for these variables.

Procedures

Similar procedures as described in chapter two were again used for this study. All public health nurses, who administered the questionnaire package and the ESI, took part in a five-day training session. The public health nurses visited each participant in his or her home and assisted him or her in completing the questionnaire package. This package consisted of all the self-report measures of physical illness (e.g., peripheral vascular disease) and all the self-report measures of psychological distress (e.g., depression) in addition to other measures unrelated to this investigation. Additionally, at this same home visit the public health nurses assessed the participant's competence and arranged a clinic visit. At the clinic visit the video-recorded ESI was conducted. This video-recorded ESI was later coded for defense use by trained coders (see chapter two for details on training).

Physician health care costs were calculated as the total number of dollars all physicians billed the provincial government for services provided to each person over the three months post-ESI. Defense use, coded from the ESI, was prospectively related to physician health care costs three months post-ESI and cross-sectionally to physical and mental health measures.

Data Analysis

I compared each participant's Defense-Q profile to the Prototypical Adaptive Defense Profile (ADP) using the same procedure as in chapter one. That is, the person's Defense-Q profile was compared to the ADP profile using a within subject correlation computed across the 25 defenses in the profile. I then used this value (the Adaptive Defense Profile (ADP) Similarity Score) as an index of defense use in all analyses relating to physician health care costs and physical and mental health.

Results

All Participants

I first tested the reliability of the coders on a subset of 30 randomly selected ESIs. Treating coders as items, the Cronbach Alpha was .91, which was considered acceptable. ADP Similarity Scores ranged from -.57 to .75 ($M = .29$) indicating a large range of defensive functioning². Physician health care costs for each participant ranged from 0 to 2251 dollars over the three months following the survey. The descriptive information for all additional medical and psychological health variables used in this study are presented in Table 2.

Simple Relations between ADP Similarity Scores and Various Health Indexes

Higher ADP Similarity Scores significantly predicted less physician health care costs ($r = -.08, p < .05$). ADP Similarity Scores were unrelated to peripheral vascular disease and heart attack. ADP Similarity Scores were significantly and positively related to cancer ($r = .06, p < .05$) in the direction opposite to expectations.

ADP Similarity Scores were significantly related to less depression ($r = -.23, p < .001$), more optimism ($r = .10, p < .01$), fewer days of work was missed due to illness ($r = -.09, p < .01$), higher nurse's ratings of competence ($r = .15, p < .001$), and fewer diagnoses of mental illness ($r = -.09, p < .05$).

ADP Similarity Scores and Physician Health Care Costs

A hierarchical regression analysis was first conducted where physician health care costs was the dependent measure. Age, gender, and limits of daily activities (LDA) imposed by medical illness assessed by the MCIS were entered on step one, the ADP

Similarity Score was entered on step two, and the two-way interactions between age, gender, LDA and ADP Similarity Scores were entered on step three. The three-way and four-way interactions were entered on steps four and five, respectively. Age and LDA were significant predictors of physician services, and ADP Similarity Scores accounted for a significant amount of the variance (5%) in physician health care costs in addition to age and LDA ($\beta = -.09$, $p < .01$ in Step 2; see Table 3). None of the interactions involving the ADP Similarity Scores were significant.

ADP Similarity Scores and Medical Diagnoses

To see if persons with high ADP Similarity Scores were actually more physically healthy than persons with low ADP Similarity Scores, secondary analyses were conducted. Three major medical illnesses were selected for comparison: Heart attacks, peripheral vascular disease, and cancer. These were chosen because they are highly prevalent diseases in Nova Scotia, and because of their high morbidity and mortality. Additionally, these illnesses can significantly compromise quality of life and are associated with high health care costs. Dividing all participants into tertiles based on their ADP Similarity Scores, those with the highest ADP Similarity Scores were significantly less likely to have peripheral vascular disease ($t = 1.69$, $p < .05$) and almost significantly less likely to have ever had a heart attack ($t = 1.53$, $p = .06$). There was no significant difference for cancer.

ADP Similarity Scores and Psychological Distress

Secondary analyses were also conducted to see if persons with high ADP Similarity Scores were actually more psychologically healthy than persons with low ADP Similarity Scores. Three general measures of psychological health were selected for comparison: Depression, optimism, competence (rated by a public health nurse), and diagnosis of a mental illness. I chose these measures because of: 1) the high prevalence of depression; 2) the role optimism is thought to play in recovery from illness and disease; 3) the frequency with which health professionals are required to make ratings of competence; and 4) the role psychology plays in the assessment and treatment of mental illness respectively. Again dividing all participants into tertiles based on their ADP

Similarity Scores, those with the highest ADP Similarity Scores were significantly less likely to self-report being depressed ($t = 5.54, p < .001$), more likely to be optimistic about their future ($t = -2.19, < .01$), less likely to miss days at work due to illness ($t = 3.05, p < .001$), rated as more competent by a public health nurse ($t = 3.06, p < .001$), and significantly less likely to have ever been diagnosed with a mental illness ($t = 2.27, p < .01$).

Healthy Participants

Because severe medical and psychiatric diagnoses such as cancer or personality disorder may lead to increased physician health care costs, independent of ADP Similarity Scores. I conducted a second set of analyses removing persons with known major medical and psychiatric diagnoses. Any person having either a major medical diagnosis such as peripheral vascular disease, heart attacks, or cancer or a psychiatric diagnosis were removed from the sample, leaving 548 participants. Higher ADP Similarity Scores still significantly predicted decreased physician health care costs ($r = -.10, p < .05$). And, in hierarchical regression analyses, controlling for age, gender, and LDA, higher ADP Similarity Scores again accounted for a significant amount of the variance (5%) in physician health care costs ($\beta = -.11, p < .01$; see Table 4).

When the averaged Defense-Q defense profile for the top 10% of physician health care cost users was plotted against the Prototypical Adaptive Defense Profile, those persons who used more physician services clearly employed adaptive defenses to a lesser degree (e.g., used less Sublimation) and employed maladaptive defenses to a greater degree (e.g., used more Dissociation; see Figure 2).

Discussion

Based on previous research by Vaillant and others who have demonstrated a relation between defense use and indexes of illness behavior, I hypothesized that persons using more adaptive defenses should have less total physician health care costs than persons using less adaptive defenses. I found that use of more adaptive defenses was related to decreased physician health care costs after controlling for age, gender, and limits in daily activity imposed by medical illness. This result was obtained when those

with major medical and psychiatric diagnoses were included in the analyses, and it remained even when such participants were excluded from analyses.

How are these results to be understood? There are a number of possible explanations for my findings. First, adaptive defense use may be associated with better physical health, and this may result in fewer physician health care costs. Secondary analyses from this study support this hypothesis. Examining physical illness diagnoses, those persons with higher ADP Similarity Scores were significantly less likely to have peripheral vascular disease or a heart attack, although the latter was not quite significant. There was, however, no significant difference between the two groups for cancer. The results from the current study are consistent with those reported by Vaillant. Vaillant reported that those persons with more adaptive defenses visited physicians less often due to poor physical health; were less likely to have poor objective physical health as rated by an internist; were less likely to have poor subjective ratings of physical health; and were less likely to have a greater number of somatic complaints under stress (Vaillant, 1977: 1978). Thus, Vaillant has proposed that more adaptive defense use is a protective factor for poor physical health and therefore results in a decreased number of physician visits. The results from this investigation are consistent with Vaillant's hypothesis.

Future studies should prospectively assess the relation between defense use, poor physical health, and physician health care costs in population-based samples to provide a greater understanding of how defense use is causally related to physical health and physician health care costs. Future studies should also attempt to measure physical health more objectively. That is, rather than relying on self-report measures of physical health, objective physician reports of physical health along with specific diagnoses should be used. Finally, assessing type of service along with physician health care costs would allow us to determine the relation between defense use and particular physician services and costs. It may be that use of poor defenses is associated with specific physician services or specific physician costs.

A second possible explanation for the relation between adaptive defense use and physician costs may be that adaptive defense use is associated with better psychological

health, and this may result in fewer physician health care costs. I also examined if psychological health differences existed between those high and low in their use of adaptive defenses. I examined this aspect of health, because it, too, is a possible explanation for increased health service use. That is, it is possible that persons approach physicians more because they have more physical illness, or because they have more psychological distress. Of course, it is also possible that both motivate persons to seek out physician services. Other reasons for physician use will be presented and discussed, below. Persons with high ADP Similarity Scores were significantly less depressed, more optimistic, less likely to miss days at work due to illness, more likely to be rated as competent by a public health nurse, and less likely to have been given a diagnosis of mental illness. These results suggest that those persons with high ADP Similarity Scores are more psychologically healthy. As well, these results support those by others such as Vaillant (1977) who found that those persons who use more adaptive defenses are less likely to be depressed and miss days from work due to illness. As well, Akkerman, Carr, and Lewin (1992) also report that those persons with more adaptive defenses are less likely to be depressed or suffer from an affective disorder. Taken together, the results are consistent with those previously found suggesting that those persons with more adaptive defense use are more psychologically healthy. Again, future studies should attempt to prospectively determine the relation between psychological health and physician health care costs. Additionally, if psychological variables as thought to lead to increased physician health care costs then the assessment of additional psychological variables that have been related to health care also need to be considered (e.g., ego strength, anxiety; Vaillant, 1977).

I would like to provide a clinical example to describe the way that defense use may be related to physician health care costs. In this example a psychological variable leads to both increased physician health care costs and inappropriate health care utilization. Consider a person with somatization disorder who repeatedly seeks medical attention for which no medical explanation can be found. If we assume that this person's somatic complaints are the result of psychological and not physical processes then this

person is inappropriately (and ineffectively) seeking attention by repeatedly seeking physician assistance. This has the potential to result in unnecessary and expensive physician costs (e.g., repeated attempts to identify physical etiologies for multiple somatic complaints). This person may be aided more by psychological rather than medical attention, which may not only offer a more appropriate intervention to the person but may also be more cost-effective in the long run, as the intervention may resolve the underlying psychological problems rather than repeatedly treating the manifestations. It may be that identifying typical defense use is one way to locate such persons. Being able to identify such persons and reduce inappropriate use of services and physician health care costs is important as health care systems, both public and private, attempt to provide a full range of medical care with limited dollars. This hypothesis remains to be tested. To test this hypothesis it would be necessary to see if identification and referral of appropriate 'somatizing' patients reduces physician health care costs and more effectively resolves the underlying psychological problem in these persons. That is, it would first be necessary to demonstrate that these patients have with increased physician health care costs. Second, it would be necessary to demonstrate that these patients are inappropriately seeking physician services. Third, it would be necessary to demonstrate that by identifying and referring these patients that there is a subsequent decrease in physician health care costs. And fourth, it would be necessary to demonstrate that referral of these patients results in a more successful treatment of their condition. Future studies should attempt to measure psychological health using alternative methods including both self-report and observer- or clinician-reports. This would help in identify those persons who may not be able to accurately self-report and would help us understand which psychological variable impact upon defense use and physician health care costs. As well, future studies should identify the appropriateness of physician seeking behavior

A third possible explanation for the relation between defense use and physician health care costs may be that physicians are reacting to a person's defenses and referring that person for more services, which ultimately results in more physician health care costs. To investigate this possible explanation it would be necessary to associate more

adaptive defense use with fewer referrals for additional physician health care services, and it would be necessary to identify that physicians were referring on the basis of defenses. Of course, a system for identifying appropriate versus inappropriate referral would also need to be in place to investigate this hypothesis. Future studies may want to want to look at physician-related referral costs for each person, and medically sound versus inappropriate reasons for physician-related referrals.

A fourth possible explanation for the relation between defense use and physician health care costs may be that those high ADP Similarity Score persons are not getting the appropriate physician based preventative care and interventions that they need. Put another way, it may be that those persons with low ADP Similarity Scores have increased physician health care costs because they are more appropriately seeking physician services for preventative care and interventions (e.g., six month check-up for blood pressure, yearly physicals). It may be that those persons with high ADP Similarity Scores are overly optimistic and so are not engaging in physician based preventative behaviors regarding their health (e.g., having blood pressure and cholesterol monitored by a physician). To test this hypothesis it would be necessary once again to determine the appropriateness of physician seeking behavior and physician health care costs. It would also be necessary to demonstrate that high ADP Similarity Score persons are less likely to engage in physician based preventative care and interventions than low ADP Similarity Score persons.

The results from this investigation provide information relating to defense use and physician health care costs. That is, defense use is associated with physician health care costs in a population-based representative sample, and accounts for a significant amount of the variance in physician health care costs over and above age, gender, and LDA. It is interesting to note that medical illness and symptoms do not explain all the variance in physical health care costs. In fact, a recent report indicates that up to seventy percent of medical costs are the result of lifestyle and health habits and not medical illnesses (Dunham & Leetch, 1996). This suggests that not only is there much variance left to be explained in physician health care costs, but perhaps there are other non-medical illness

and symptom variables that may contribute to the variance in physician health care costs. The findings from this study lend support to the generalizability of previous results (Vaillant, 1977; 1978) which were often limited by both sample size and sample demographics (e.g., white middle class males). As well, since the results from this study are consistent with theoretical expectations and previous empirical findings they suggest the continued investigation of the relation between defense use and physician health care costs. Investigation of the causal mechanisms involved in this relation, however, remain to be completed.

Strengths and Limitations

In Vaillant's study of the relation between defense use and adult adjustment, he lists the limited generalizability of his sample as a methodological problem (Vaillant, 1976). These findings, in a population-based sample, support Vaillant's (1976) findings. Like Vaillant, I chose not to rely on self-report of defense use due to the unconscious nature of defenses. This approach is supported by research that indicates clinical judges are better able to assess some aspects of mental health than are participants (see Shedler, Mayman, & Manis, 1993). While the use of clinical judges can require more time than self-report, this approach is necessary if we are to accurately understand the intricate relation between personality and health, for example, how unconscious defense use impacts on health care utilization.

One limitation of this study is the use of self-reported medical diagnoses. The use of self-report responses for physical health outcomes such heart attacks, however, is standard practice for large population surveys (Harlow & Linet, 1989). A second possible limitation is the use of self-reported psychiatric diagnoses. By not specifying the type of psychiatric diagnosis (i.e., persons were simply asked if they had a psychiatric diagnosis) we are likely to have a large range of disorders that may have small to large health service use consequences. By removing all of these persons, however, I am applying the most conservative approach to dealing with this limitation. A third limitation of this study is not being able to distinguish between physician costs associated

with visits to a general practitioner and physician costs associated with visits to a specialist. I attempted to partially control for this difficulty by removing all persons with self-reported medical diagnoses such as heart attacks, however, this process is imperfect.

A fourth limitation of this study is the method that psychological health was determined. In order to understand better if those persons with high ADP Similarity Scores were less psychologically well than those persons with low ADP Similarity Scores I looked at a number of markers of psychological health. Again, most of these markers were self-report (except for nurses ratings of competence) and future studies should consider alternative ways to measure these constructs and alternative markers of mental health. Taken together, however, it would seem that those persons with higher ADP Similarity Scores are more psychologically healthy.

Sigmund Freud proposed that distressing affect underlies psychopathology (S. Freud, 1894/1962). He also proposed that much of what is perceived as psychopathology is a healing process that poorly attempts to manage affect. That is, Sigmund Freud believed that affect could be dislocated and transposed from one idea or object and reattached to another idea or object through the use of defenses (S. Freud, 1894/1962). Vaillant (1977) has expanded on this theory by suggesting that context and flexibility may also be important in trying to understand how adaptive defense use impacts on mental and physical health:

...if a defense is used in a rigid, inflexible way, if it is motivated more by past needs than by present and future reality, if it too severely distorts the present situation, if it abolishes rather than limits gratification, or if it dams rather than rechannels the expression of feelings, then it is likely to be maladaptive. (Vaillant, 1977, p. 85).

I would like to suggest that the effectiveness of a person's defense mechanism use in managing affect is key to understanding the relation between defenses and health, such as poorer health outcomes and increased health care utilization. I encourage researchers to test this hypothesis in future research involving medical, psychiatric, and healthy samples. Defenses contribute uniquely to our understanding of personality and

psychopathology, and deserve investigation to further our understanding of their relation to health.

Footnotes

- 1 The term defense refers to an unconscious mode of mental functioning demonstrated by a person and not to specific behaviors, types of affect, or ideas. This use is consistent with that proposed by authors such as Ihlevich and Gleser (1986) who also consider defenses to refer to unconscious mental processes. For an alternative use of the word defense, see Cramer, 1991.
- 2 For further information on how the Adaptive Defense Profile Score relates to demographics and other cross-sectional variables for this population-based sample, see Davidson et al., 1999.

Table 1
Demographic Characteristics of Male and Female Participants Selected from the NSHS95 Survey

Demographics	Men	Women
N	354	312
Age		
Mean	51.2	47.7
Range	18-90	18-87
Language		
English	98.0%	96.8%
French	0.8%	3.2%
Occupational level		
Executive	13.5%	7.3%
Professional	15.8%	20.4%
Technical	5.1%	4.4%
Marketing	7.3%	9.1%
Administrative Support	3.9%	18.6%
Service	13.0%	26.6%
Agriculture	7.6%	2.2%
Craft	9.0%	0.7%
Labor	16.0%	10.6%
Marital status		
Single	18.9%	20.3%
Married	71.3%	61.6%
Separated	1.7%	1.6%
Divorced	3.4%	3.5%
Widowed	4.5%	12.9%
Educational level		

High school or less	54.0%	45.8%
Some college or university	27.3%	39.5%
Completed college or university	18.6%	14.7%
Household Income		
Less than \$20,000	4.4%	2.6%
\$ 20,001 -- \$ 40,000	15.8%	13.5%
\$ 40,001 -- \$ 60,000	59.9%	69.7%
More than \$ 60,001	19.9%	14.2%

Table 2
 Descriptive Statistics for Medical Illness and Psychological Distress Variables

	<u>M</u>	SD	N	%	Total N
Peripheral vascular disease			39	5.8	667
Heart attack			62	9.3	667
Cancer			39	5.8	667
Psychiatric diagnosis			19	2.8	667
Depression	7.48	8.05			659
Optimism	3.85	0.92			663
Days ill	1.32	6.84			660
Competence	4.84	0.46			659

Note. Depression = depression as measured by the CES-D; Optimism = optimism as measured by two items relating to 'optimism in the future' and 'things going your way'; Days ill = number of days of work missed in the last year due to illness; Competence = public health nurse's ratings of competence.

Table 3
Regression Table for Physician Health Care Costs

Variable	<u>B</u>	<u>SE B</u>	β
Step 1			
Age**	1.14	.31	.15
Gender	11.90	11.07	.05
Limits of Daily Activity**	17.93	5.60	.13
Step 2			
Adaptive Defense Profile Score*	-61.53	24.54	-.10

Note. $\Delta R^2 = .04$ for step one; $\Delta R^2 = .05$ for step two.

* $p < .01$

** $p < .001$

Table 4
Regression Table for Physician Health Care Costs Controlling for Medical and
 Psvchiatric Diagnoses

Variable	<u>B</u>	<u>SE B</u>	β
Step 1			
Age**	1.19	.31	.16
Gender	12.89	11.33	.05
Limits of Daily Activity*	17.19	5.70	.13
Step 2			
Adaptive Defense Profile Score*	-62.40	25.05	-.11

Note. $\Delta R^2 = .04$ for step one; $\Delta R^2 = .05$ for step two.

* $p < .01$

** $p < .001$

Figure Captions

Figure 1. Prototypical Adaptive Defense Profile.

Figure 2. Prototypical Adaptive Defense Profile compared to the averaged defense profile for the top 10% of physician health care cost users.

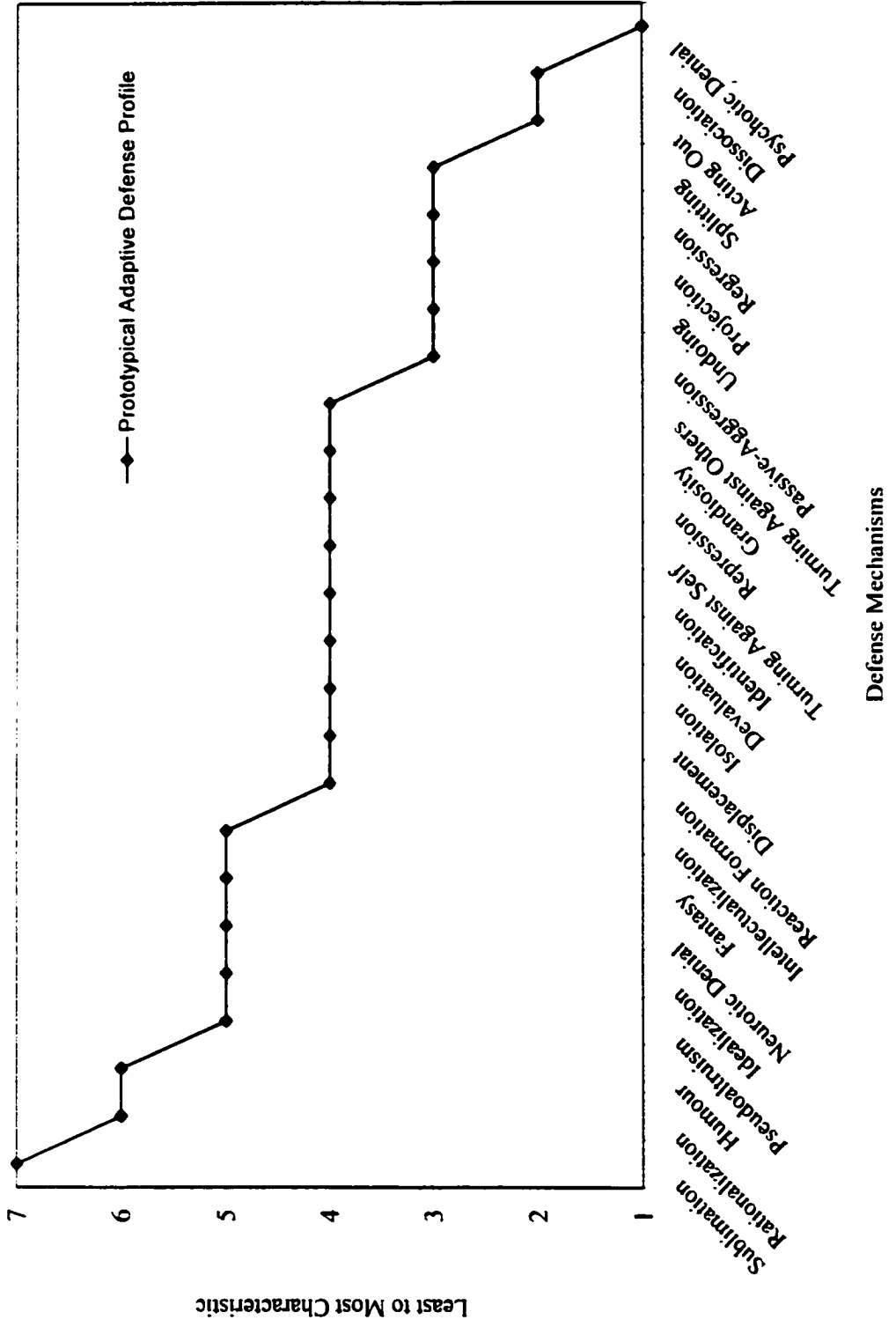


Figure 1.

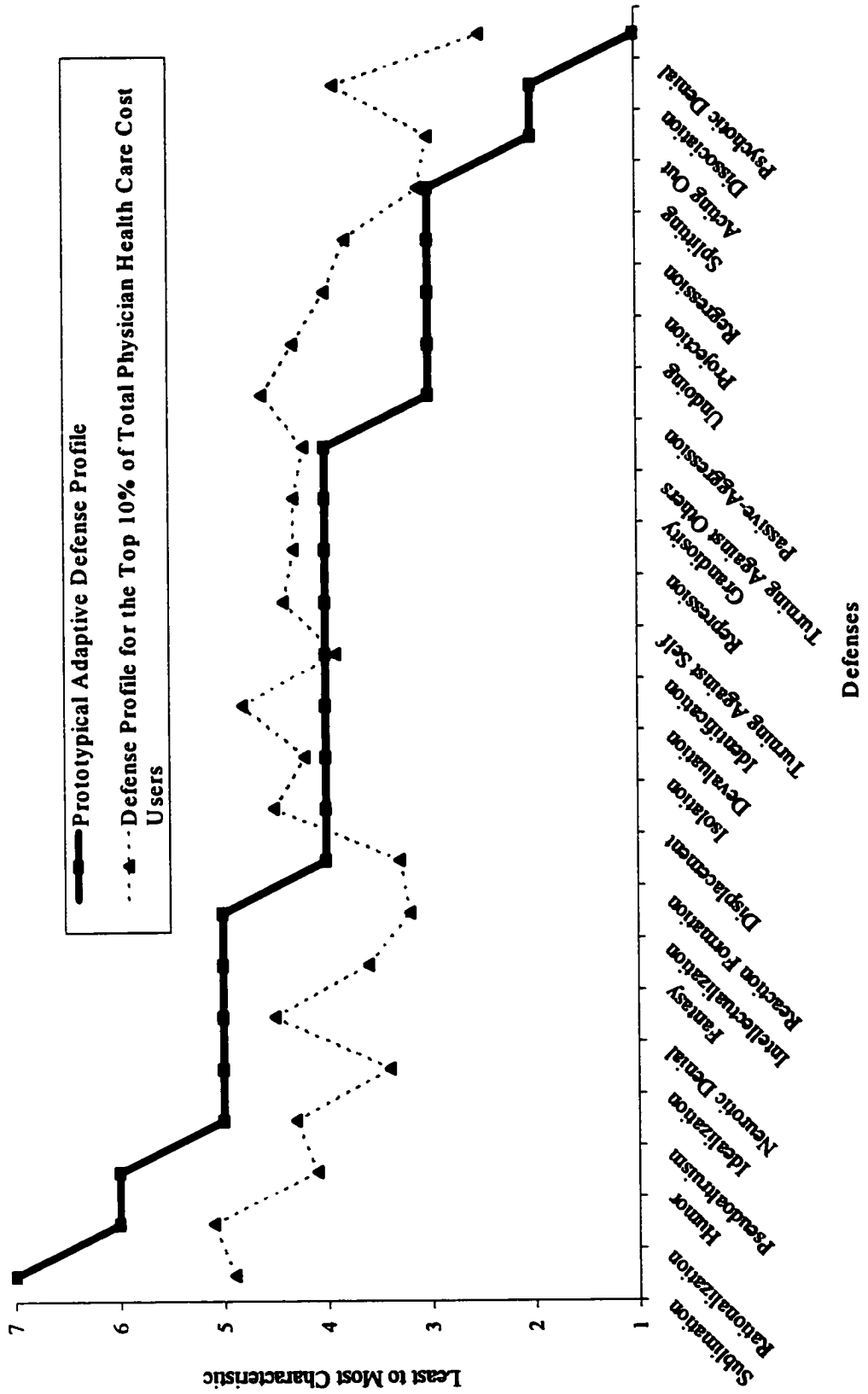


Figure 2.

CHAPTER FOUR: GENERAL DISCUSSION

Until quite recently the concept of defenses¹ has been rejected as being 'Freudian' and at worst untestable and at best irrelevant (Vaillant, 1998). However, it was recently reported in the *Journal of Personality* that "it is too late for contemporary personality and social psychologists to defend successfully against the intrusion of defense mechanisms into our thinking and research" (Norem, 1998). Defenses are a potentially important personality variable that provides an understanding of the mechanisms that underlie unconscious processing. By studying defenses we can gain a greater understanding of both persons and motivation.

Assessment of Defenses

Despite the importance of the concept of defenses, the assessment of defenses has not remained without its problems. Of the three general methods by which to assess defenses, it is observer-report that shows the most promise. Laboratory approaches to assessing defenses are limited by the number of defenses they assess and by the amount of time required by their methodology. Laboratory approaches typically assess a limited number of defenses, which limits their clinical utility (Cramer, 1991). Additionally, the similarity between laboratory-defined approaches to assess defenses and the clinical phenomenon of defenses is often so remote that the two have very little in common. Perhaps most importantly, however, is that laboratory approaches to assessing defenses (e.g., using the Defense Mechanism Test) often depend on the skill and training of the person running the equipment and scoring the results (Cramer, 1991).

Self-report measures are limited in their ability to tap unconscious processes (the hallmark of defenses). For example, the Defense Mechanism Inventory (DMI; Gleser & Ihilevich, 1969) specifically describes a threat to the test taker. Given that defenses are hypothesized to be unconscious processes used against unconscious threats (Kline, 1993; Cramer, 1998), then behavior reported on within the DMI (where the threat and behavior is consciously identified) seems not to be defensive. An equally important limitation of self-report measures is their inability to consider the idiographic nature of psychic threat or conflict. What is threatening for one person may not be threatening for another

person. Thus, a fixed threat and response format may not be suitable for assessing defenses. Self-report measures are also limited by the limited validity research conducted thus far. That is, many self-report instruments are unrelated to theoretically expected clinical phenomena and are often only validated against other self-report measures (Davidson & MacGregor, 1998). Both of these are serious limitations for self-report instruments (Davidson & MacGregor, 1996; Shedler, Mayman, & Manis, 1993). As such, researchers have looked for an alternative method to assess defenses.

Observer-report measures to assess defenses have offered the most promise and are most similar to clinical phenomenon. The observer approach to assess defenses is based on the assumption that persons are not able to report on unconscious processes and identify defenses; and therefore it uses trained observers (or coders) to identify defenses. Unlike self-report measures, observer report does allow for the idiographic nature of defenses and psychic threat (Cramer, 1991; Perry & Ianni, 1998). It is also observer report approaches to defense assessment that have shown the most promise in research and clinical work. For example, defenses as assessed by observer-report have been related to both self-report and objective measures of health longitudinally (Vaillant, 1977). It was because of the strengths and benefits of observer-report assessment that the observer-based Defense-Q was developed.

The Defense-Q: Development and Reliability

The Defense-Q was developed as an alternative to self-report instruments and was designed to build on the strengths of observer-based instruments to assess defenses. The Defense-Q uses Q-sort methodology which is based on rank ordering defenses into a predefined fixed distribution. This methodology captures the idiographic nature of defense use within a person. This approach supposes that the meaningful aspect of defenses is their relative use compared to each other. This is much more in line with our current understanding of defenses and the function they play (Vaillant, 1977; 1992). Contemporary theorists now recognize that defenses are not inherently maladaptive (Cramer, 1991; Sjoback, 1993). Defenses are viewed as compromise solutions that are employed to maximize gratification of impulse demands within the constraints imposed

by reality (Brenner, 1981; Gill, 1963; Sandler, 1974; Schafer, 1968). Defenses therefore function in ways that are both defensive, by modulating responses to reduce or avoid threat, and adaptive, by offering partial, acceptable, and indirect gratification of needs (e.g. Vaillant, 1993). As such, it is the overall pattern of defense use that is important when assessing defenses.

Another strength of the Defense-Q is that it attempts to use a standard set of definitions that are widely used and accepted by other researchers. For example, the works of Sigmund Freud (Freud, 1894/1962), Vaillant (Vaillant, 1977), and the DSM-III-R (American Psychiatric Association, 1987) were all consulted in arriving at a number of defenses and at their definitions. This is especially important in light of the lack of consensus regarding how many defenses there are, and how those defenses should be named. By consulting the major writers in the field of defenses, and attempting to find uniformity between the writers, the Defense-Q is an instrument that can be used by many different clinicians and researchers. The Defense-Q comes with a coding manual that provides definitions, process to code statements, clinical examples, and other similar defenses for each defense included in the Defense-Q (see Appendix A). While most observer-based instruments have a coding manual, the Defense-Q manual is more extensive and provides clinical examples to facilitate coding of defenses (cf. Vaillant, 1977).

The Defense-Q also offers promise in terms of reliability. Davidson and MacGregor (1996) report on coder agreement using the Defense-Q in a study in which 11 coders watched and rated 30 video-recorded Expanded Structured Interviews for each participant's defense use. Results suggest that the Defense-Q has good individual defense consistency ($M = .72$), good coder agreement ($M = .69$), and good generalizability across all participants and all defenses (profile reliability; $M = .69$). Most researchers discussing the reliability of a defense measure do not report reliability in this manner. This approach is helpful, however, because it allows one to look at multiple aspects of reliability relating to the defense instrument. For example, poor reliability on two or three participants may indicate problems with the interview or with the participant

(e.g., the person may be difficult to code for defenses), as opposed to limitations in the instrument. Or, poor reliability between coders may be a function of one coder and not of the instrument per se. Being able to explore the reliability of a defense assessment instrument from multiple perspectives is necessary to make informed psychometric decisions. Similar coder reliability results were found when using a population-based sample. Taken together, reliability results suggest that the Defense-Q has reliability equal to or better than the other published observer-report measures such as Vaillant's Maturity of Defenses (Vaillant, 1977) or the Defense Mechanism Rating Scale (Bond, Gardner, Christian, & Seigal, 1983). Although additional reliability studies need to be conducted using the Defense-Q, these initial results suggest that the Defense-Q appears to be a reliable instrument and warrants further investigation.

The Defense-Q: Defenses and Outcomes in Personality and Health

A number of outcome (validity) studies using the Defense-Q have been conducted and suggest further investigation using this instrument. For example, in a study on the generalizability of the Defense-Q, two coders not only agreed with each other when rating defense use but also agreed with a therapist's ratings of defense use (Davidson, MacGregor, Johnson, Woody, & Chaplin, 1999). This study is especially important for validity, as one of the coders is a therapist. It has been suggested that a therapist's rating of defenses is a 'gold standard' against which to validate any instrument designed to assess defenses (Vaillant, 1992). Therefore, having a therapist and a coder agree on a person's defenses provides some evidence for the validity of the instrument.

Davidson, MacGregor, Johnson, Woody, & Chaplin (1999) also demonstrate that the Defense-Q is related in theoretically expected directions with indexes of both personality and health. For example, Adaptive Defense Profile (ADP) similarity scores are associated with lower levels of self-reported and observed hostility and depression, and with higher levels of observer-rated empathy and competence. These findings are consistent with theoretical expectations (e.g., less mature defenses related to dysthymia; Bloch, Shear, Markowitz, Leon, & Perry, 1993), and compliment some of the recent work on hostility by Helmers who has found that increased defensiveness is related to

increased blood pressure (Helmert & Krantz, 1996). As well, in a population-based sample Davidson et al. (1999) demonstrated that Adaptive Defense Profile (ADP) scores (as assessed by the Defense-Q) are associated with lower levels of self-reported and observed hostility, self-reported depression, binge drinking, and use of diet pills to control weight. This population-based study replicates the findings from previous similar studies using convenience samples. Finally, Davidson and others (1999) found that higher Adaptive Defense Profiles scores are related to use of nutritional programs to control diet, nurses' ratings of competence, and self-reported satisfaction with health. These findings replicate and extend Vaillant's results, for example, relating more adaptive defense use to better health in a convenience sample of men (Vaillant, 1977). These results remain after controlling for demographic characteristics such as age, gender, and negative affectivity, something that Vaillant was not able to accomplish with his all-male sample. While additional studies remain to be conducted, these initial results suggest the further investigation of hypotheses relating to defense use as assessed by the Defense-Q.

The Defense-Q: Blood Pressure and Health Care

In Chapter Two I discussed how defense use is cross-sectionally related to blood pressure. Using Alexander's (1939) original writings relating defenses to hypertension, I tested the relation between adaptive defense use and resting blood pressure. I hypothesized that those persons with more adaptive defense use would have lower resting blood pressure. Because a sympathetic arousal – cardiac reactivity model suggests that the positive effects of more adaptive defense use are cumulative and will not be seen until later in life, I further hypothesized that it would only be in older adults that adaptive defense use would be associated with lower resting blood pressure. Results suggest that for women but not men, adaptive defense use was associated with lower resting systolic and diastolic blood pressure. These results suggest that adaptive defense use plays a protective role against higher resting blood pressure in women. And as discussed in chapter two, although the effect size is small even small effect sizes in large samples can translate into many people with increased risk for hypertension. These results are similar

to those achieved by other researchers relating defense use to blood pressure (Vaillant & Gerber, 1996). This study is unique, however, in that it was conducted with a population-based sample.

As mentioned previously, it is unlikely that the findings are the result of restricted blood pressure range as even the young (18 – 34 years) persons had a wide range of blood pressure readings. Interestingly, unlike Vaillant I found that defense use plays a protective role against high blood pressure in women but not in men. As suggested in chapter two, this may be the result of later onset of diseases such as hypertension in women and their greater use of personality variables (e.g., defenses use) for the maintenance of health. Future investigations of this hypothesis, however, remain to be conducted.

When analyzed separately, results suggested that defense use may be associated with systolic blood pressure in men and with diastolic blood pressure in women. This result is consistent with some other research which has found gender differences in hemodynamic responses (e.g., Lawler, Wilcox, & Anderson, 1995), however, additional studies need to be conducted to further investigate this relation.

In Chapter Three I discussed how defense use is prospectively related to physician health care costs. Using Vaillant's previous findings relating defense use to physical health and health care utilization (Vaillant, 1976; 1977), I hypothesized that more adaptive defense use would be related to decreased physician health care costs. In a prospective design, I found that more adaptive defense use was related to decreased physician health care costs controlling for age, gender, and limits of daily activity imposed by medical illness. These results also remained after removing those with medical and psychiatric illness. Additionally, I found that those persons with high ADP Similarity Scores were more physically healthy and more psychologically healthy. The results from Chapter Three are consistent with Vaillant's findings in his convenience sample (e.g., Vaillant, 1977). By extending the assessment of defenses to a population-based sample I was able overcome the limitation of a convenience sample, and by using a socialized health care system I was able to eliminate the data collection limitations

associated with multiple insurance companies or uninsured persons. The results from this investigation accounted for a significant 5% of the variance associated with physician health care costs even when controlling for limits of daily living and self-reported medical and psychiatric illness. Given that the results come from a population-based study they have the potential to translate into a significant amount of the costs associated with physician health care.

The Defense-Q: The Six Definitional Criteria of Defenses

So let us return to the six definitional criteria identified in Chapter One and see if the Defense-Q meets these criteria. The first criterion is that defenses are unconscious. The way that defenses are defined in the Defense-Q coding manual emphasizes their unconscious nature. For defenses to be coded using the Defense-Q it is necessary that the coder infer that the person is unaware of the motivation for the defense (i.e., the defense is unconscious). That is, based on the manner in which the person is describing the event, or based on the actual occurrence of the defense in the interview, the coder must determine that the person is unaware of the motivation for the defense at the time of its occurrence. An example of this might be a person reflexively pulling at his hair only and every time he is asked a question about the poor relationship he has with his wife (an example of undoing). If the process is judged to be conscious then the behavior is judged not to be indicative of a defense, however, clear tests of this supposition are warranted. The model guiding the research reported in this dissertation is one where defenses are thought to operate within the individual (intra-psychically). As noted previously, however, other models such as an interpersonal model of defense may also be plausible and may explain these and other findings related to defenses. Further investigations of the mechanism (e.g., intra-psychic, interpersonal, transactional, etc.) by which defenses are related to blood pressure, health care, and other outcome variables need to be conducted. The second criterion for defenses is that there must be a psychic threat that causes the activation of the defenses. Because the Defense-Q does not predefine a set of behaviors that are indicative of each defense, nor does it set up a scenario that is assumed to be threatening to all persons, it is therefore sensitive to individual differences in how

defenses may manifest themselves and which situations persons may uniquely find threatening. Coders attempt to consider individual differences in the nature of psychic threat, although the unconscious nature of the threat is inferred. The third criterion for defenses is that the defense must manage affect. Again, because the Defense-Q is an observer-based instrument used on the basis of clinical interview data it is possible for the observer to determine if affect management has taken place. For example, a person may use a particular defense in the interview and thereby resolve his or her anxiety. That is, the interviewer may notice a person has become upset and agitated and has reflexively resorted to the use of a particular defense that thereby reduces the person's visual anxiety and agitation. This behavior could then be coded as a defense. As well, in the coding manual for the Defense-Q, all behavior judged to be defensive must result in anxiety relief or affect management for the behavior to be indicative of a defense. Thus, the Defense-Q attempts to meet the third definitional criterion regarding affect management. More specific tests of this criterion, however, are only possible with pre- and post-stressor measurement of affect and anxiety within the context of stressors that need to be unconsciously defended against. The fourth criterion for defenses is that they demonstrate stability. To date, no investigation of the stability of the defenses assessed by the Defense-Q exists. I encourage future researchers of the Defense-Q to investigate its stability, and I suggest that future studies look at the test-retest reliability of the Defense-Q over different time frames (e.g., one week, one year). The fifth criterion for defenses is that they be adaptive as well as maladaptive. The Defense-Q samples both what are considered adaptive defenses such as Sublimation, and what are considered maladaptive defenses such as Psychotic Denial. Using the ADP the Defense-Q profile approach allows for the opportunity to look at the adaptive or maladaptive pattern of defense use rather than at adaptive or maladaptive defenses in isolation. This use of defense patterns is also consistent with Sigmund Freud's conceptualizations of defenses and their relative, rather than isolated, use. Finally, the sixth criterion for defenses is that they be distinct. That is, rather than looking at a single defense or at overall defense levels, defenses should be distinctive from each other in any defense assessment

instrument to provide the maximum amount of individual difference information. The Defense-Q training manual provides information on how to identify and code 25 distinct defenses. The Defense-Q does not provide an overall defensiveness or defense level score and was constructed to represent 25 discrete defenses. The distinctiveness of each defense, and the utility of using the Defense-Q to look at one defense independently, however, needs further investigation.

These results and initial investigations suggest that the Defense-Q demonstrates not only reliability and validity, but likely meets four of the six defining criteria necessary for defense assessment instruments. It is unknown whether the Defense-Q meets the other two criteria, as further investigation is needed. The Defense-Q to date, however, has demonstrated preliminary reliability and validity. This suggests the further investigation and use of the Defense-Q.

The Defense-Q: Strengths of a New Instrument

One of the strengths associated with the Defense-Q is that it is observer based and does not suffer from the limitations of self-report (Cramer, 1991). As well, the Defense-Q training manual provides operationalizations of each defense and provides information on how to code for defenses. A second strength is the reliability of the Defense-Q. The Defense-Q has demonstrated reliability across multiple coders, multiple data sources, and multiple participants. For example, the Defense-Q has been used by therapists, graduate, and undergraduate students and across data sources such as psychotherapy, intake interviews, and structured interviews. Reliability for the Defense-Q has been found in patients, convenience samples, and in a population-based sample, thereby increasing the generalizability of the Defense-Q. The third strength of the Defense-Q is that it has been found to be related to validity constructs (e.g., hostility; Helmers & Krantz, 1996) in theoretically consistent ways. Although the Defense-Q is a new instrument, the validity studies that exist suggest further use and investigation of the Defense-Q. Future investigations should continue, however, to explore the convergent and discriminant validity of the Defense-Q and its relation to other measures of defenses. Although the preliminary investigations look promising, additional research is needed to better

understand the Defense-Q and its function as a measure of defenses. The Defense-Q has also been used to test theoretical hypotheses relating to defense use and both blood pressure and physician health care costs. The ability of the Defense-Q to be used to test psychodynamic hypotheses is a fourth strength that can aid psychodynamic researchers. Using a reliable and valid measure of defenses to empirically test psychodynamic hypotheses will also lend legitimacy to the testing of psychodynamic constructs and their acceptance into current research and theory. Finally, a fifth strength of the Defense-Q is its ability to assess the overall pattern of defenses rather than looking at defenses in isolation or at levels of defenses. This will aid researchers interested in idiographic differences in defense use and clinicians in individual treatment planning.

How Can the Defense-Q Be Used in the Future?

There are two different methods by which Defense-Q data can be analyzed: Profile analysis and individual defense analysis (McKeown & Thomas, 1988). Although I reported individual defense and profile reliability, I used the profile approach in Chapters Two and Three as this was more consistent with Sigmund Freud's conceptualizations of defenses. Using the profile analysis approach, I compared participants' profiles to a theoretically-derived profile, in this case a Prototypical Adaptive Defense Profile, but this approach can be used with any type of theoretically interesting profile (e.g., an hypothesized borderline profile; Bond, Paris, & Zweig-Frank, 1994). There are two other variants of profile analysis that would be interesting to explore.

The first variant of profile analysis is empirical profile analysis (McKeown & Thomas, 1988). This involves the selection of a particular sample of persons who are similar on some characteristic (such as clinically diagnosed depressed persons, or those with specific personality disorders). Averaged profiles for that sample or population are then constructed based on the averaged ranked profile of each person.

The second variant of profile analysis is Q-analysis. Q-analysis is conceptually similar to a factor analysis, but first the data matrix is transposed, such that the factoring is done on persons, not items (Stephenson, 1953). Thus, the statistical question becomes

which persons load on a similar factor, given their defense use, rather than which defense items load on a similar factor. Typically, then, one examines other data collected about persons who load on the same factor, to see what else makes them similar. I have demonstrated some initial construct validity for one profile approach, but other profile analyses of defense use will allow testing of many of the psychodynamic suppositions about defenses.

Clinical Implications of Defense Assessment

A reliable and valid instrument to assess defenses offers the clinician a helpful tool and valuable information. The importance of defenses is perhaps nowhere more important than in the Axis II disorders (personality disorders; Karasu & Skodol, 1980; Perry et al., 1998) where specific maladaptive defenses are considered to be some of the defining features of the disorders (e.g., splitting and borderline personality disorder; Bond et al., 1994; Hanley, 1992; Landecker, 1992; Perry & Cooper, 1986). The importance of defenses to understanding personality and to understanding personality disorders is evidenced by the sixth axis under consideration in the DSM-IV, which is devoted to defenses (Perry et al., 1998). The Defense-Q provides a promising instrument by which to assess the defense in personality disordered persons and to test the theoretical assumptions that there are differences in defense use between disorders (e.g., borderline personality disorder tends to be associated with splitting whereas antisocial personality disorder is associated with acting out).

Psychodynamic ego psychology is based on the importance of defenses and seeks to help those in psychological distress by working to change their defense structure (Polansky, 1982). The Defense-Q can be used to assess a person's defense use in a manner that attempts to eliminate clinician idiosyncrasies in understanding and definitions of defenses. Using this information, a clinician can then identify maladaptive defenses and seek to change these through therapy. The Defense-Q can also be used to empirically evaluate the efficacy of such therapy. It is possible to have defenses assessed pre- and post-therapy by a coder blind to diagnosis and treatment status. This would demonstrate the efficacy of ego psychology psychotherapy in changing defense use.

Changes in defense use can also be related to other outcome measures of improvement such as decreased hospitalization, increased self-efficacy, or increased personal satisfaction, as additional criteria measures to demonstrate the efficacy of therapy. To assess defenses in a psychometrically sound manner provides clinicians with important and meaningful information that can be used in their understanding of persons and in treatment planning.

Defenses and the Future

Defenses have proven to be difficult constructs to conceptualize and assess. I hope that I have demonstrated, however, that they are far from undefinable and untestable, as many critics of psychoanalytic constructs would have us believe. I have attempted to use this dissertation to demonstrate my thinking relating to defenses, and to provide a template by which other psychoanalytic concepts may be operationalized and tested. I encourage others to continue to investigate defenses and add to our knowledge of how they relate to personality and health.

Footnotes

1 The term defense refers to an unconscious mode of mental functioning demonstrated by a person and not to specific behaviors, types of affect, or ideas. This use is consistent with that proposed by authors such as Ihilevich and Gleser (1986) who also consider defenses to refer to unconscious mental processes. For an alternative use of the word defense, see Cramer, 1991.

APPENDIX A

The Defense-Q:

An idiographic Q-sort measure of defense mechanisms.

A manual for clinicians and researchers.

This manual is one part of a training package designed to provide clinicians and researchers with the basic information necessary to assess a comprehensive set of defenses using the Defense-Q. As such, the manual has been constructed to be easy to read and easy to use. Each defense mechanism assessed with the Defense-Q has a definition, a set of “process to code” statements, case examples, and a list of similar defenses and differentiating features. I have tried to ensure that the structure between defenses is as parallel as possible. One way that I have attempted to achieve parallel structure is through the use of consistent terminology. Before reading this manual a number of clarifications must be made:

- 1) to avoid the repetitive use of phrases such as “unconsciously motivated instincts, wishes, anxiety, impulses, or feelings causing intrapsychic conflict when discussing the aetiology of the defensive behaviour”, the word impulse will be used instead. The use of this word, however, implies instincts, wishes, anxiety, and feelings that cause intrapsychic conflict.
- 2) similarly, to avoid the repetitive use of phrases such as “self, other, object, and situation” when discussing the redirection of the impulses, the word object will be used. Again, the use of this word implies self, other, object, and situation unless otherwise specified.
- 3) finally, the use of the word catharsis refers to the outlet or expression of intrapsychic conflict resulting in psychological relief.

We must also consider the unconscious/conscious nature of defenses. For the purposes of this manual and the use of this instrument, the aetiology of the impulse and the action of defending against the impulse is considered to be unconscious at the time of action. That is, there is neither conscious recognition of the aetiology of the impulse nor of the specific defense mechanism utilized to protect the ego from the impulse. There may be conscious recollection after the fact, but at the time of use the defense mechanism is considered unconscious and reflexive.

I hope you find this manual helpful, informative, and enjoyable. Should you have comments or suggestions regarding any component of the Defense-Q training procedure, please feel free to contact me with them.

Best of luck.

1. SUBLIMATION

DEFINITION OF SUBLIMATION

Sublimation is the cathartic transformation of an impulse causing intrapsychic conflict into a socially acceptable and productive activity or behaviour. The original goal of the impulse changes to become productive. This indirect catharsis allows the ego to defend against the impulse without directly experiencing the adverse consequences associated with direct impulse expression.

PROCESS TO CODE SUBLIMATION

1. There is a threatening or anxiety provoking impulse that causes intrapsychic conflict.
2. There is an engagement in some socially acceptable and productive activity or behaviour.
3. By engaging in sublimation there is a catharsis of the impulse and the conflict is at least temporarily relieved or resolved.

CASE EXAMPLES

1. Bob misses a deadline for an important project and is reprimanded for his poor work ethic. That evening Bob starts building the deck he has postponed for weeks. The work progresses well, and by the end of the evening he has virtually forgotten how angry he was with his boss earlier in the day.
2. Every time Jane gets into a heated argument with her fiancée she seems to play her piano better and with more emotion. In fact, she even writes songs about the trials and tribulations of being in love.
3. Peter, who has recently separated from his wife, is praised by his superiors for his dedication to the company. Since his separation, he regularly works fifty-five to sixty hours a week.
4. Sarah who is uncomfortable with her aggressive and violent feelings joins a judo class. She subsequently moves to the top of her ranking within the class.

SIMILAR DEFENSE MECHANISMS AND DIFFERENTIATING FEATURES

Sublimation: The cathartic transformation of impulses causing intrapsychic conflict into socially acceptable and productive activities or behaviours.

Example: Karen feels aggressive towards John.

Sublimation as a defense: Karen teaches karate.

1. Reaction Formation: The cathartic transformation of impulses causing intrapsychic conflict into exaggerated and opposite impulses.

Reaction Formation as a defense: Karen thinks she loves John.

2. Humour: The cathartic discharge of impulses causing intrapsychic conflict through the use of humour or laughter

Humour as a defense: Karen makes fun of John.

3. Pseudoaltruism: The cathartic discharge of impulses causing intrapsychic conflict through helping others with similar impulses resolve their intrapsychic conflict

Pseudoaltruism as a defense: Karen helps others who are having difficulty dealing with their anger and frustration.

4. Undoing: The transformation of impulses causing intrapsychic conflict into symbolic gestures as a means of negating or making amends for the impulses.

Undoing as a defense: Karen constantly watches over John and makes lists of potential dangers that may befall him.

2. REACTION FORMATION

DEFINITION OF REACTION FORMATION

Reaction formation is the cathartic transformation of an impulse causing intrapsychic conflict into an exaggerated and opposite impulse. The affect associated with the impulse is reversed. This catharsis allows the ego to defend against the impulse without directly experiencing the adverse consequences associated with the original impulse.

PROCESS TO CODE REACTION FORMATION

1. There is a threatening or anxiety provoking impulse that causes intrapsychic conflict.
2. There is an exaggerated and opposite impulse expressed to defend against the initial impulse.
3. By engaging in reaction formation there is a catharsis of the impulse and the conflict is at least temporarily relieved or resolved.

CASE EXAMPLES

1. Concerned that he may be attracted to other men, Joe constantly discriminates against gay men by physically and verbally abusing them.
2. Raymond and Jill were fighting. Jill was screaming at the top of her lungs and Raymond could not stand her voice. The more she screamed the more he became upset. Suddenly, Raymond asked Jill if her throat was sore from yelling and whether she wanted a glass of water to soothe it.
3. Angry at her husband, Susan made him an extra special lunch to take to work and ensured that he had enough food to eat and a special treat for dessert.
4. John hates his job, but finds this hatred threatening. Every time someone asks him about his job and what he does, however, he raves about the job, the people he works with, and how much he enjoys the work he is doing. At the same time, Joe vows he would never leave his job.

SIMILAR DEFENSE MECHANISMS AND DIFFERENTIATING FEATURES

Reaction formation: The cathartic transformation of impulses causing intrapsychic conflict into exaggerated and opposite impulses.

Example: Jane is upset and angry with her husband George.

Reaction formation as a defense: Jane becomes excessively concerned over George's wellbeing.

1. **Splitting:** The cathartic division of impulses causing intrapsychic conflict by viewing the object related to the impulses as either all good or all bad.

Splitting as a defense: Jane thinks that George is completely terrible (some times) and thinks that he is completely wonderful (at other times).
2. **Devaluation:** The preventive cathartic transformation of impulses causing intrapsychic conflict into exaggerated negative qualities and attributes ascribed to the object that might elicit the impulses.

Devaluation as a defense: Jane thinks that George is terrible, stupid, unloving, and a poor father.
3. **Humour:** The cathartic discharge of impulses causing intrapsychic conflict through the use of humour or laughter.

Humour as a defense: Jane makes jokes about how funny it is when wives become angry with their husbands.
4. **Turning against self:** The cathartic transformation of impulses causing intrapsychic conflict into exaggerated negative qualities and attributes turned inward and ascribed to the self.

Turning against self as a defense: Jane believes that she is a terrible wife and unworthy of George.
5. **Projection:** The cathartic placing of impulses causing intrapsychic conflict onto another non-self object.

Projection as a defense: Jane believes that George is upset and angry with her.
6. **Turning against others:** The cathartic transformation of impulses causing intrapsychic conflict into exaggerated blame and attributes turned outward and ascribed to others.

Turning against others as a defense: Jane believes that it is her children's fault that she is upset and angry with her husband, not her fault.

3. DISPLACEMENT

DEFINITION OF DISPLACEMENT

Displacement is the cathartic redirection of an impulse causing intrapsychic conflict towards an object that is perceived as less threatening. The original goal of the impulse changes from action towards an unsafe object to action towards a less threatening object. This catharsis allows the ego to defend against the threatening impulse by direct expression towards a safe object.

PROCESS TO CODE DISPLACEMENT

1. There is a threatening or anxiety provoking impulse that causes intrapsychic conflict.
2. Instead of dealing with the impulse right away, the individual unconsciously directs the impulse towards a less threatening situation, usually at a later time.
3. By engaging in displacement there is a catharsis of the impulse and the conflict is at least temporarily relieved or resolved.

CASE EXAMPLES

1. Phillip has never been able to confront his mother and is afraid of her. Whenever Phillip has a fight with his mother he becomes irritable and verbally abusive with his girlfriend.
2. Sally, who was recently criticized by her supervisor for having a poor work ethic goes home and vents her anger towards her children rather than towards her boss.
3. Jason, who is heart-broken after discovering that his girlfriend has been unfaithful, goes home and refuses to help his little sister with her science project.
4. Melissa, who is afraid to tell her supervisor that she is too demanding, goes back to her office and yells at her fellow students.

SIMILAR DEFENSE MECHANISMS AND DIFFERENTIATING FEATURES

Displacement: The cathartic redirection of impulses causing intrapsychic conflict towards an object that is perceived as less threatening.

Example: Jennifer is mad at her boss Robert.

Displacement as a defense: Jennifer goes home and yells at her children.

1. Sublimation: The cathartic transformation of impulses causing intrapsychic conflict into socially acceptable and productive activities or behaviours.

Sublimation as a defense: Jennifer goes home and re-paints the kitchen.

2. Regression: The cathartic discharge of impulses causing intrapsychic conflict through reverting to an earlier developmental behaviour that was previously adaptive.

Regression as a defense: Jennifer throws a temper tantrum when she gets back to her office.

3. Identification with the aggressor: The cathartic transformation of impulses causing intrapsychic conflict through identifying with the object causing the impulses.

Identification with the aggressor as a defense: Jennifer becomes intimidating and chastising, (just like her boss, but unlike Jennifer, typically) when dealing with clients.

4. Projection: The cathartic placing of impulses causing intrapsychic conflict onto another non-self object.

Projection as a defense: Jennifer believes that Robert is mad at her.

5. Pseudoaltruism: The cathartic discharge of impulses causing intrapsychic conflict through helping others with similar impulses resolve their intrapsychic conflict.

Pseudoaltruism as a defense: Jennifer helps her best friend Melissa get even with her boss.

6. Acting out: The cathartic discharge of impulses causing intrapsychic conflict through impulsive or destructive behaviour without thought of the consequences of such actions.

Acting out as a defense: Jennifer slaps her boss across the face.

7. Undoing: The cathartic transformation of impulses causing intrapsychic conflict into symbolic gestures as a means of negating or making amends for the impulses.

Undoing as a defense: Jennifer makes a list of items in the office and constantly checks to see that they are secure and out of reach.

8. Turning against others: The cathartic transformation of impulses causing intrapsychic conflict into exaggerated blame and attributes turned outward and ascribed to others.

Turning against others as a defense: Jennifer blames her co-workers for the problems she is having with her boss, rather than herself.

4. DISSOCIATION

DEFINITION OF DISSOCIATION

Dissociation is the cathartic escape from an impulse causing intrapsychic conflict by temporarily losing a sense of the self. There is a change in the self and the self is removed from the impulse. This loss of the self allows the ego to defend against the impulse by removing itself.

PROCESS TO CODE DISSOCIATIONS

1. There is a threatening or anxiety provoking impulse that causes intrapsychic conflict.
2. There is a temporary loss of the sense of self.
3. By engaging in dissociation there is a catharsis of the impulse and the conflict is at least temporarily relieved or resolved.

CASE EXAMPLES

1. While en route to a meeting with another man to whom he is uncomfortably attracted, Charles suddenly finds himself in a strange part of town not knowing who he is, how he got there, or where he is going.
2. Dianna, an honest business woman was given a prison sentence for a crime she did not commit. During this time Dianna developed the ability to completely detach herself, as though she was not even there.
3. Geoff who was exposed to continual verbal abuse from his parents, learns to "switch off". It becomes quite easy for him to do this after awhile, and his parents believe he is being stubborn for not responding. When asked later about the events, Geoff said he was able to "go away to a safe place until it was safe to return".
4. Anne, a mother of three children, describes intense feelings of resentment towards her children. She often finds herself standing and staring off while her children throw tantrums. Anne is able to lose her self and during these times does not recognize her children as her own.

SIMILAR DEFENSE MECHANISMS AND DIFFERENTIATING FEATURES

Dissociation: The cathartic escape from impulses causing intrapsychic conflict by temporarily losing a sense of the self.

Example: Joseph is being physically and sexually abused by his father and is anxious and fearful of him .

Dissociation as a defense: Joseph loses his sense of self during the abuse.

1. **Isolation:** The cathartic division of impulses causing intrapsychic conflict such that affect is lost while the associated veridical idea of the affect is retained.

Isolation as a defense: Joseph is able to remember the abuse but has no emotion, or memory of emotion, associated with the abuse.

2. **Projection:** The cathartic placing of impulses causing intrapsychic conflict onto another non-self object.

Projection as a defense: Joseph believes that his father is anxious and fearful of him.

3. **Fantasy:** The cathartic escape of impulses causing intrapsychic conflict by using transient fantasies, excessive daydreaming, or imaginary achievements.

Fantasy as a defense: Joseph fantasizes what it would be like to live in a happy place and not be afraid or scared.

4. **Psychotic denial:** The cathartic escape from impulses causing intrapsychic conflict by breaking from reality and failing to see or perceive external reality.

Psychotic denial as a defense: Joseph does not remember the physical abuse and insists that he and his father were playing catch during the time that the abuse was occurring.

5. **Repression:** The cathartic escape from impulses causing intrapsychic conflict by banishing the impulses from awareness so there is no memory or affect remaining.

Repression as a defense: Joseph has no memory of the abuse that took place and is unable to recall any details regarding the abuse (there is no loss of the self).

6. **Neurotic denial: The cathartic division of impulses causing intrapsychic conflict by refusing to consider or acknowledge their implications.**

Neurotic denial as a defense: Joseph acknowledges that the abuse happened but insists that it did not cause him any emotional or physical problems.

5. ISOLATION

DEFINITION OF ISOLATION

Isolation is the cathartic division of an impulse causing intrapsychic conflict such that affect is lost while the associated veridical idea of the impulse is retained. There is a change in the affect associated with the impulse such that the affect is lost. This catharsis allows the ego to retain the thoughts of the impulse while isolating the thought from the affect of the impulse. The impulse becomes divided into affect and thought, and only the thought is retained.

PROCESS TO CODE ISOLATION

1. There is a threatening or anxiety provoking impulse that causes intrapsychic conflict.
2. There is a concentration on the facts and information of the situation while not being able to remember, recall, or experience the affect associated with the situation.
3. By engaging in isolation there is a catharsis of the impulse and the conflict is at least temporarily relieved or resolved.

CASE EXAMPLES

1. Christopher, who is about to undergo life-threatening surgery for cancer, knows the details of the surgery and what he can expect from it, but has no affect associated with the upcoming surgery. He cannot report having any feelings concerning the surgery, either positive or negative.
2. Following the loss of her husband, Maria goes to grief counselling and describes all the things she and her husband previously did together, but is unable to remember or say how she felt about him emotionally.
3. When relating how his girl friend of five years had left him, Richard was matter-of-fact and detailed, but emotionless.
4. Even though Patricia was in therapy for the physical and sexual abuse she suffered as a child, she was only able to report the details of the abuse. Patricia was unable to report how she felt about being abused or how she felt towards her abusers.

SIMILAR DEFENSE MECHANISMS AND DIFFERENTIATING FEATURES

Isolation: The cathartic division of impulses causing intrapsychic conflict such that affect is lost while the associated veridical idea of the impulses is retained

Example: Laura has recently lost her son Matthew in a car accident.

Isolation as a defense: Laura can remember all the details of the car accident and the loss of Matthew, but cannot recall, or presently experience, any affect associated with the loss.

1. **Dissociation:** The cathartic escape from impulses causing intrapsychic conflict by temporarily losing a sense of the self.

Dissociation as a defense: Laura temporarily loses her sense of self and is unable to remember who or where she is.

2. **Projection:** The cathartic placing of impulses causing intrapsychic conflict onto another non-self object.

Projection as a defense: Laura believes that her best friend is sad and upset over the loss of Matthew.

3. **Pseudoaltruism:** The cathartic discharge of impulses causing intrapsychic conflict through helping others with similar impulses resolve their intrapsychic conflict.

Pseudoaltruism as a defense: Laura establishes a support group to help others deal with the loss of their children.

4. **Rationalization:** The cathartic transformation of impulses causing intrapsychic conflict into rational sounding and reassuring but distorted explanations.

Rationalization as a defense: Laura explains Matthew's death as occurring because 'everyone must die some time'.

5. **Intellectualization:** The cathartic transformation of impulses causing intrapsychic conflict into abstract generalizations.

Intellectualization as a defense: Laura explains the death of Matthew as the result of an increasingly decadent society where the financially elite control access to medical services and use this control to keep the financially disadvantaged under control and subjugated.

6. **Fantasy:** The cathartic escape from impulses causing intrapsychic conflict by using transient fantasies, excessive daydreaming, or imaginary achievements.

Fantasy as a defense: Laura fantasizes about a place where she and Matthew are together and the fun they have.

7. **Psychotic denial:** The cathartic escape from impulses causing intrapsychic conflict by breaking from reality and failing to see or perceive external reality.

Psychotic denial as a defense: Laura refuses to believe that her son is dead and still buys him toys and makes plans to go on a mother-son holiday.

8. **Repression:** The cathartic escape from impulses causing intrapsychic conflict by banishing the impulses from awareness so there is no memory or affect remaining.

Repression as a defense: When asked about her son, Laura pauses for a moment while looking blank, and only later is able to recall her son's death.

9. **Neurotic denial:** The cathartic division of impulses causing intrapsychic conflict by refusing to consider or acknowledge their implications.

Neurotic denial as a defense: Laura knows her son is dead but fails to see how the death of her son should change her life.

6. SPLITTING

DEFINITION OF SPLITTING

Splitting is the cathartic division of an impulse causing intrapsychic conflict by viewing the object related to the impulse as alternately all good or all bad.

There is a change in the cognitions associated with the impulse such that they are split into two: All good or all bad. This division of cognitions allows the ego to defend against the impulse by not having to integrate good and bad, and thus eliminates ambiguity.

PROCESS TO CODE SPLITTING

1. There is a threatening or anxiety provoking impulse that causes intrapsychic conflict.
2. There is an attribution of alternately all positive or all negative qualities ascribed to the object.
3. By engaging in splitting there is a catharsis of the impulse and the conflict is at least temporarily relieved or resolved.

CASE EXAMPLES

1. George had restored an old house for a young couple and they had become good friends. One night shortly after the couple moved in, George broke into the house and beat the husband senseless. The wife managed to calm George down, but she became seriously disturbed after the incident. At times, she praised George for being such a good friend, hard worker, and for sparing their lives while claiming that the detectives were the real villains. At other times, however, she saw George as evil.
2. Valerie, who evaluates people according to their intelligence, divides people into groups of geniuses or idiots. These evaluations change depending on how the individuals are behaving at work and how Valerie currently feels.
3. When frustrated by the actions of his girlfriend, Fred is unable to recall any positive feelings or attributes associated with her. When relaxed and over his frustration, however, Fred thinks his girlfriend is the greatest in the world.

4. While preparing a major term paper Natalie had nothing good to say about her academic career or herself. After receiving a good mark on the completed paper she couldn't recall having any harsh words about herself or her career. She claims that everything is alright and that she never had any concerns.

SIMILAR DEFENSE MECHANISMS AND DIFFERENTIATING FEATURES

Splitting: The cathartic division of impulses causing intrapsychic conflict by viewing the object related to the impulses as alternately all good or all bad.

Example: Bob has an argument with his girlfriend Jane.

Splitting as a defense: Bob thinks that Jane is the worst person in the world (sometimes) and Bob thinks that Jane is the best person in the world (other times).

1. **Idealization:** The cathartic transformation of impulses causing intrapsychic conflict into exaggerated positive qualities ascribed to the object related to the impulses, and in turn gaining ego strength from then associating with the object.

Idealization as a defense: Bob thinks that Jane is really great (all the time) and, since she likes him, he must therefore be a great person.

2. **Devaluation:** The cathartic transformation of impulses causing intrapsychic conflict into exaggerated negative qualities and attributes ascribed to the object eliciting the impulses.

Devaluation as a defense: After their argument, Bob tells everyone that he always thought that Jane was a terrible and stupid person.

3. **Dissociation:** The cathartic escape from impulses causing intrapsychic conflict by temporarily losing a sense of the self.

Dissociation as a defense: Bob has no idea who he is during the argument with Jane.

4. **Isolation:** The cathartic division of impulses causing intrapsychic conflict such that affect is lost while the associated veridical idea of the impulses is retained.

Isolation as a defense: Bob has no feelings about Jane. When asked, he can remember specific events but no emotions associated with Jane.

5. **Psychotic denial:** The cathartic escape from impulses causing intrapsychic conflict by breaking from reality and failing to see or perceive external reality.
Psychotic denial as a defense: Bob does not recognize that he has ever met Jane or that she was ever his girlfriend.
6. **Neurotic denial:** The cathartic division of impulses causing intrapsychic conflict by refusing to consider or acknowledge their implications.
Neurotic denial as a defense: Bob recognizes that Jane said terrible things during their argument but does not see how this suggests that Jane does not like him.

7. REGRESSION

DEFINITION OF REGRESSION

Regression is the cathartic discharge of an impulse causing intrapsychic conflict through reverting to an earlier developmental behaviour that was previously adaptive. The behaviours associated with the impulse are changed into childlike equivalents. When not threatened the individual must show an ability to function at more sophisticated levels. This discharge allows the ego to defend against the impulse by adopting a previously successful and adaptive method of coping without having to deal with the impulse in an appropriately sophisticated manner. The impulse remains unchanged, but the defense against the impulse reverts to a less sophisticated level.

PROCESS TO CODE REGRESSION

1. There is a threatening or anxiety provoking impulse that causes intrapsychic conflict.
2. There is a reversion to an earlier developmental stage that was previously adaptive (The subject must return to a higher level of functioning once the impulse is cathected)
3. By engaging in regression there is a catharsis of the impulse and the conflict is at least temporarily relieved or resolved.

CASE EXAMPLES

1. When Linda's boss informed her that she was being fired due to her poor performance on the job she threw a temper tantrum. Feeling better, she quietly gathered up her things and went home.
2. As Dan grew increasingly more nervous about the test he was about to write he began sucking his thumb. He soon felt much calmer, and was able to study for the test.
3. Devastated that her boyfriend broke up with her, Maria curled up on her mother's lap and cried for hours. Feeling better she later called John and asked to discuss the break-up with him.

4. Jason, who was 30, went to the dentist for the first time. When he was told he would have to have a few teeth filled he began crying saying he wanted to go home. After crying he felt much better and was able to face the dental work.

Similar Defense Mechanisms and differentiating features

Regression: The cathartic discharge of impulses causing intrapsychic conflict through reverting to an earlier developmental behaviour that was previously adaptive.

Example: Jessica is upset about getting a poor job evaluation.

Regression as a defense: Jessica throws a temper tantrum.

1. **Splitting:** The cathartic division of impulses causing intrapsychic conflict by viewing the object related to the impulses as alternately all good or all bad.

Splitting as a defense: Jessica thinks her boss is terrible and incompetent (sometimes) and great and ingenious (other times).
2. **Devaluation:** The cathartic transformation of impulses causing intrapsychic conflict into exaggerated negative qualities and attributes ascribed to the object eliciting the impulse.

Devaluation as a defense: After getting her poor job evaluation, Jessica tells everyone that she always thought her boss was terrible and incompetent.
3. **Projection:** The cathartic placing of impulses causing intrapsychic conflict onto another non-self object.

Projection as a defense: Jessica believes that her boss is upset at her because she is critical of his job performance.
4. **Acting out:** The cathartic discharge of impulses causing intrapsychic conflict through impulsive or destructive behaviour without thought of the consequences of such actions.

Acting out as a defense: Jessica hits her boss, tells him what she thinks of him, and then quits since he obviously does not appreciate her.
5. **Neurotic denial:** The cathartic division of impulses causing intrapsychic conflict by refusing to consider or acknowledge their implications.

Neurotic denial as a defense: Jessica does not worry about her job evaluation because she believes that this evaluation will not have any effect on her.

6. **Turning against others:** The cathartic transformation of impulses causing intrapsychic conflict into exaggerated blame and attributes turned outward and ascribed to others.

Turning against others as a defense: Jessica believes that if her boss was not such a terrible leader, who gave such poor directions and leadership, then she would not be getting poor evaluations.

8. DEVALUATION

DEFINITION OF DEVALUATION

Devaluation is the cathartic transformation of an impulse causing intrapsychic conflict into an exaggerated negative quality or attribute, which is then ascribed to the object eliciting the impulse. Devaluation tends to be a way that individuals react to all environments and impulses, such that there is a change in the self and everything is put down. In devaluation impulses are dealt with by pre-emptively devaluing the object related to the impulse. This catharsis allows the ego to defend against an impulse by blaming an object for its aetiology and thereby removing the impulse's threat.

PROCESS TO CODE DEVALUATION

1. There is a threatening or anxiety provoking impulse that causes intrapsychic conflict.
2. There is an exaggerated attribution of negative characteristics to the object causing the impulse.
3. By engaging in devaluation there is a catharsis of the impulse and the conflict is relieved or resolved.

CASE EXAMPLES

1. After being dumped by his girlfriend Bob did not feel bad because he always knew that she was unworthy of him.
2. Jane never really worried about having fewer friends than most people because most people were not 'mature', 'smart', or 'sophisticated' enough to be her friends.
3. Geoff constantly faulted his co-workers for every mistake they made, indicating that they were stupid and unable to handle their position like he was.
4. Judith did not extend any congratulations to her co-workers after they had completed a rather large project successfully, since she knew their success was either a chance occurrence or due to their connections with the boss, and not due to skill or ability.

SIMILAR DEFENSE MECHANISMS AND DIFFERENTIATING FEATURES

Devaluation: The cathartic transformation of impulses causing intrapsychic conflict into exaggerated negative qualities and attributes ascribed to the object related to the impulses.

Example: John is upset and angry with his best friend.

Devaluation as a defense: John tells everyone that he always thought that his best friend was stupid and ugly.

1. **Splitting:** The cathartic division of impulses causing intrapsychic conflict by viewing the object related to the impulses as alternately all good or all bad.
Splitting as a defense: John thinks that his best friend is stupid and ugly (sometimes) and intelligent and attractive (other times).
2. **Turning against self:** The cathartic transformation of impulses causing intrapsychic conflict into exaggerated negative qualities and attributes turned inward and ascribed to the self.
Turning against the self as a defense: John thinks he is stupid and ugly.
3. **Projection:** The cathartic placing of impulses causing intrapsychic conflict onto another non-self object.
Projection as a defense: John thinks that his best friend is upset and angry with him.
4. **Acting out:** The cathartic discharge of impulses causing intrapsychic conflict through impulsive or destructive behaviour without thought of the consequences of such actions.
Acting out as a defense: John punches his best friend in the face.
5. **Turning against others:** The cathartic transformation of impulses causing intrapsychic conflict into exaggerated blame and attributes turned outward and ascribed to others.
Turning against others as a defense: John believes that it is his best friend's fault that he is having trouble with him.

9. HUMOUR (REGRESSION IN THE SERVICE OF THE EGO)

DEFINITION OF HUMOUR

Humour is the cathartic discharge of an impulse causing intrapsychic conflict through the use of humour or laughter. The cognitions associated with the impulse are changed to be seen as funny. This catharsis allows the ego to defend against the impulse by allowing a type of discharge of the affect associated with the impulse.

PROCESS TO CODE HUMOUR

1. There is a threatening or anxiety provoking impulse that causes intrapsychic conflict.
2. There is use of humour or situational comedy.
3. By engaging in humour there is a catharsis of the impulse and the conflict is at least temporarily relieved or resolved.

CASE EXAMPLES

1. Emily worked as a volunteer for the Canadian Cancer Society for over twenty years. Two weeks after her 70th birthday she found out she had cancer. Upon hearing the news Emily left the office laughing and commenting that "life was so funny".
2. Bob who was nervous about meeting his fiancée's Catholic parents for the first time, cracked inappropriate jokes about their religion during the course of the dinner. Although everyone else at the table felt uncomfortable, Bob seemed more relaxed as the evening went on.
3. Feeling overwhelmed and grief stricken at her grandfather's funeral, Jill laughed and giggled throughout the eulogy. After the ceremony, Jill felt more relaxed and composed when she escorted her grandmother out of the church.
4. When Jason found out that his brother started dating the girl he had just broken up with, he was both angry and upset. Later, when his brother talked to him about it, Jason shrugged his shoulders, laughed and cracked jokes about keeping things inside the family. After his brother left Jason made plans to go out that night and felt better about the whole situation.

SIMILAR DEFENSE MECHANISMS AND DIFFERENTIATING FEATURES

Humour: The cathartic discharge of impulses causing intrapsychic conflict through the use of humour or laughter.

Example: Heather is anxious about going out on a date.

Humour as a defense: Heather jokes about dating and laughs when ever the topic is brought up for conversation.

1. **Displacement:** The cathartic redirection of impulses causing intrapsychic conflict towards an object that is perceived as less threatening.

Displacement as a defense: Heather becomes nervous about another social engagement she has with a platonic friend.

2. **Fantasy:** The cathartic escape from impulses causing intrapsychic conflict by using transient fantasies, excessive daydreaming, or imaginary achievements

Fantasy as a defense: Heather dreams about being sexy and alluring and about charming all the men she dates.

3. **Grandiosity:** The cathartic transformation of impulses causing intrapsychic conflict into an ever-present assumption of one's specialness and one's superiority.

Grandiosity as a defense: Heather has always believed that she is one of the most beautiful and attractive women around, and that any man would be lucky to have a date with her.

10. IDENTIFICATION WITH THE AGGRESSOR

DEFINITION OF IDENTIFICATION WITH THE AGGRESSOR

Identification with the aggressor is the cathartic transformation of an impulse causing intrapsychic conflict through identifying with the object related to the impulse. There is a change in the self to become the same as the threatening impulse. This catharsis allows the ego to defend against the impulse by identifying with the object causing the impulse and thereby identifying with the impulse itself.

PROCESS TO CODE IDENTIFICATION WITH THE AGGRESSOR

1. There is a threatening or anxiety provoking impulse that causes intrapsychic conflict.
2. There is an alteration of values, beliefs, or behaviour to match those of the object causing the impulse and then an identification with the object.
3. By engaging in identification with the aggressor there is a catharsis of the impulse and the conflict is at least temporarily relived or resolved.

CASE EXAMPLES

1. Kelly, who was physically and mentally abused as a child, takes on the same abusive behaviour as her parents with her classmates.
2. Simon, who was kidnapped and assaulted, helps his captives rob a bank and subjects the hostages to the same treatment he suffered from the kidnappers.
3. Julie, who feels constant pressure from her boss to work harder, takes on her employer's aggressive tactics when working with him.
4. Bruno, who plays football for his high school team, but is afraid of being hurt by the other team, takes on a more aggressive approach during the game

SIMILAR DEFENSE MECHANISMS AND DIFFERENTIATING FEATURES

Identification with the aggressor: The cathartic transformation of impulses causing intrapsychic conflict through identifying with the object related to the impulses.

Example: Andrew is anxious at work because his boss is constantly yelling at him.

Identification with the aggressor as a defense: Andrew takes on the interaction style of his boss and yells at his co-workers and employees.

1. Displacement: The cathartic redirection of impulses causing intrapsychic conflict towards an object that is perceived as less threatening.

Displacement as a defense: Andrew goes home and yells at his children.

2. Splitting: The cathartic division of impulses causing intrapsychic conflict by viewing the object related to the impulses as alternately all good or all bad.

Splitting as a defense: Andrew thinks that his boss is terrible and awful (at one time) and wonderful and great (at another time).

3. Devaluation: The cathartic transformation of impulses causing intrapsychic conflict into exaggerated negative qualities and attributes ascribed to the object eliciting the impulses.

Devaluation as a defense: Andrew tells everyone that he always thought that his boss was stupid and did not know what he was talking about.

4. Acting out: The cathartic discharge of impulses causing intrapsychic conflict through impulsive or destructive behaviour without thought of the consequences of such actions.

Acting out as a defense: Andrew becomes angry and hits his boss.

5. Turning against others: The cathartic transformation of impulses causing intrapsychic conflict into exaggerated blame and attributes turned outward and ascribed to others.

Turning against others as a defense: Andrew blames his co-workers for the fact that his boss is always yelling at him.

11. TURNING AGAINST SELF

DEFINITION OF TURNING AGAINST SELF

Turning against self is the cathartic transformation of an impulse causing intrapsychic conflict into exaggerated negative qualities and attributes turned inward and ascribed to the self. There is a change in the cognitions associated with the impulse and the impulse is turned inward. This catharsis allows the ego to defend against the impulse by blaming the self for its aetiology and for the conflict it causes.

PROCESS TO CODE TURNING AGAINST SELF

1. There is a threatening or anxiety provoking impulse that causes intrapsychic conflict.
2. There is an internalization of the impulse resulting in self blame.
3. By engaging in turning against self there is a catharsis of the impulse and the conflict is at least temporarily relieved or resolved.

CASE EXAMPLES

1. Dave arrived home late and drunk. When Anne asked him where he had been he beat her. Anne says it is her fault that Dave beat her; she was being a nagging wife and she knows how much he hates being questioned on his whereabouts.
2. The company Mary works for will be closing within the next few months so they are gradually laying everyone off. Mary has been told that they regret having to let her go and they are very pleased with her performance. Mary insists that she must have done something wrong and if she had only worked harder maybe the company would have survived.
3. Matthew failed a test. The next day of class the teacher says he deliberately made the test impossible to pass and the marks in no way reflect the student's abilities. Matthew says he is stupid and he does not deserve to be in university.
4. Amy and her husband, William, have been having marital problems. Amy takes full responsibility, insists that it is all her fault and says William can do no wrong.

SIMILAR DEFENSE MECHANISMS AND DIFFERENTIATING FEATURES

Turning against self: The cathartic transformation of impulses causing intrapsychic conflict into exaggerated negative qualities and attributes turned inward and ascribed to the self.

Example: Julia, a bright, competent woman, is disappointed with the speed at which her career is advancing.

Turning against self as a defense: Julia believes that the reason her career is not advancing quickly is because she is stupid and unable to cope with responsibility.

1. Isolation: The cathartic division of impulses causing intrapsychic conflict such that affect is lost while the associated veridical idea of the impulses is retained.

Isolation as a defense: Julia knows that her career is not advancing quickly but she has no affect associated with this knowledge. She is neither upset nor happy, but lacks affect.

2. Regression: The cathartic discharge of impulses causing intrapsychic conflict through reverting to an earlier developmental behaviour that was previously adaptive.

Regression as a defense: Julia goes home and refuses to talk to or answer anyone.

3. Devaluation: The cathartic transformation of impulses causing intrapsychic conflict into exaggerated negative qualities and attributes ascribed to the object eliciting the impulses.

Devaluation as a defense: Julia tells everyone that she always thought her boss was stupid for not recognizing her potential.

4. Acting out: The cathartic discharge of impulses causing intrapsychic conflict through impulsive or destructive behaviour without thought of the consequences of such actions.

Acting out as a defense: Julia goes out to the bar after work and indiscriminately picks up men to sleep with.

12. PROJECTION

DEFINITION OF PROJECTION

Projection is the cathartic placing of an impulse causing intrapsychic conflict onto another non-self object. The projected impulse is unrealistic. There is a change in the cognitions associated with the impulse such that the cognitions are placed onto others. This catharsis allows the ego to defend against the impulse by attributing it to a non-self object and therefore seeing the object as experiencing the impulse rather than the self.

PROCESS TO CODE PROJECTION

1. There is a threatening or anxiety provoking impulse that causes intrapsychic conflict.
2. There is an unrealistic projection of the impulse and the conflict associated with it towards some other object.
3. By engaging in projection there is a catharsis of the impulse and the conflict is at least temporarily relieved or resolved.

CASE EXAMPLES

1. Susan, unaware of wanting to get out of a relationship, accuses her boyfriend of wanting to break up with her and destroy their relationship.
2. Andrew, who has unacknowledged feelings of hatred for his father accuses his brother of having a disrespectful and uncaring attitude toward their father.
3. Heather, who does not realize that she is racially biased, accuses others of being racially biased and complains about their behaviour.
4. Maxwell, who cannot keep a job because of his inability to get along with co-workers, characterizes all of his former employers as being totally unreasonable and impossible to get along with.

SIMILAR DEFENSE MECHANISMS AND DIFFERENTIATING FEATURES

Projection: The cathartic placing of impulses causing intrapsychic conflict onto another non-self object.

Example: Max, who has recently separated from his girlfriend Susan, is angry and upset with her.

Projection as a defense: Max believes that Susan is angry and upset with him.

1. **Reaction formation:** The cathartic transformation of impulses causing intrapsychic conflict into exaggerated and opposite impulses.

Reaction formation as a defense: Max believes that he is still in love with Susan.

2. **Dissociation:** The cathartic escape from impulses causing intrapsychic conflict by temporarily losing a sense of the self.

Dissociation as a defense: Anytime someone mentions Susan's name, Max completely detaches himself from the situation and stares blankly into space.

3. **Devaluation:** The cathartic transformation of impulses causing intrapsychic conflict into exaggerated negative qualities and attributes ascribed to the object eliciting the impulses.

Devaluation as a defense: Max tells everyone that he always thought that Susan was stupid, incompetent, and unintelligent.

4. **Repression:** The cathartic escape from impulses causing intrapsychic conflict by banishing the impulses from awareness so there is no memory or affect remaining.

Repression as a defense: Max has no feelings towards Susan and no memory of hating her.

5. **Neurotic denial:** The cathartic division of impulses causing intrapsychic conflict by refusing to consider or acknowledge their implications.

Neurotic denial as a defense: Max acknowledges that he dislikes Susan, but he cannot see how that should affect their relationship.

6. **Turning against others:** The cathartic transformation of impulses causing intrapsychic conflict into exaggerated blame and attributes turned outward and ascribed to others.

Turning against others as a defense: Max believes that it is Susan's fault that he and Susan are not getting along.

13. PSEUDOALTRUISM

DEFINITION OF PSEUDOALTRUISM

Pseudoaltruism is the cathartic discharge of an impulse causing intrapsychic conflict through helping others with similar impulses resolve their intrapsychic conflict. There is a change in the original goal associated with the impulse such that there is a resolution of others' impulses rather than one's own. This catharsis allows the ego to defend against the impulse by not having to acknowledge or deal with it personally, but by being able to deal with it in others.

PROCESS TO CODE PSEUDOALTRUISM

1. There is a threatening or anxiety provoking impulse that causes intrapsychic conflict.
2. There is an attempt to help others experiencing the same impulse resolve their conflict.
3. By engaging in pseudoaltruism there is a catharsis of the impulse and the conflict is at least temporarily relieved or resolved.

CASE EXAMPLES

1. Sandra and Tracy feel mistreated at work. Eventually they get together and discuss their feelings. A few days later Sandra approaches the manager and suggests that she should treat Tracy more fairly and with more respect.
2. Geoff, who is uncomfortable speaking in public, joins a group to assist others in overcoming their fear of speaking in public.
3. Jennifer, who suffered abuse at the hands of her ex-husband for many years, has not been able to deal with her own feelings or anger, but establishes a support group for other women who are having similar problems.
5. Jason, who recently lost his wife to a drunk driver who was never convicted, helps others campaign to have drunk drivers sentenced to the maximum prison sentences allowed.

SIMILAR DEFENSE MECHANISMS AND DIFFERENTIATING FEATURES

Pseudoaltruism: The cathartic discharge of impulses causing intrapsychic conflict through helping others with similar impulses resolve their intrapsychic conflict.

Example: Jill is anxious because she is never able to make her own wishes known.

Pseudoaltruism as a defense: Jill teaches a class on assertiveness training to help others learn to be more assertive.

1. **Sublimation:** The cathartic transformation of impulses causing intrapsychic conflict into socially acceptable and productive activities or behaviours.
Sublimation as a defense: Jill turns her frustration into paintings.
2. **Reaction formation:** The cathartic transformation of impulses causing intrapsychic conflict into exaggerated and opposite impulses.
Reaction formation as a defense: Jill becomes very demanding and bossy and insist that others cater to her every need and desire.
3. **Isolation:** The cathartic division of impulses causing intrapsychic conflict such that affect is lost while the associated veridical idea of the impulses is retained.
Isolation as a defense: Jill becomes unaware of how it makes her feel that her wishes and desires are always placed second to others, although she can remember when it happens.
4. **Undoing:** The transformation of impulses causing intrapsychic conflict into symbolic gestures as a means of negating or making amends for the impulses.
Undoing as a defense: Jill constantly makes lists of the things that everyone else wants or desires just to ensure that she does not forget anyone or what they want.

14. ACTING OUT

DEFINITION OF ACTING OUT

Acting out is the cathartic discharge of an impulse causing intrapsychic conflict through impulsive or destructive behaviour without thought of the consequence of such action. There is a change in the behaviour associated with the impulse such that the behaviour is a derivative of the original impulse. This catharsis allows the ego to defend against the impulse by directly and impulsively acting on a derivative of it.

PROCESS TO CODE ACTING OUT

1. There is a threatening or anxiety producing impulse that causes intrapsychic conflict.
2. There is an impulsive action or behaviour with little or no regard for safety or negative consequences.
3. By engaging in acting out there is a catharsis of the impulse and the conflict is at least temporarily relieved or resolved.

CASE EXAMPLES

1. When Steve was told he would not be permitted into the night-club because he was dressed inappropriately, he kicked in a glass window of the night club.
2. When Nadine was served with divorce papers, she went to singles bars and indiscriminately slept with every man who was willing.
3. When Joseph was caught stealing from the company he worked for, he went home and devoured a dozen doughnuts and then purged.
4. As soon as it was announced that Gina did not win the beauty contest, she ran backstage and began shredding her evening gown.

SIMILAR DEFENSE MECHANISMS AND DIFFERENTIATING FEATURES

Acting out: The cathartic discharge of impulses causing intrapsychic conflict through impulsive or destructive behaviour without thought of the consequences of such actions.

Example: Judith is upset with her boss about being laid off from her job.

Acting out as a defense: Judith strikes her boss and then drives off recklessly.

1. Displacement: The cathartic redirection of impulses causing intrapsychic conflict towards an object that is perceived as less threatening.

Displacement as a defense: Judith goes home and yells at her husband and children.

2. Splitting: The cathartic division of impulses causing intrapsychic conflict by viewing the object related to the impulses as alternately all good or all bad.

Splitting as a defense: Judith thinks that her boss is terrible and that no one should ever have to work with such a person (at one time) and then thinks that her boss is the greatest and that she is lucky to work with her (at another time).

3. Devaluation: The cathartic transformation of impulses causing intrapsychic conflict into exaggerated negative qualities and attributes ascribed to the object eliciting the impulses.

Devaluation as a defense: Judith tells everyone that she always thought that her boss was terrible and that no one should ever have to put up with such a person.

4. Identification with the aggressor: The cathartic transformation of impulses causing intrapsychic conflict through identifying with the object causing the impulses.

Identification with the aggressor as a defense: Judith takes on the supervisory style of her boss, which is quite unlike the way Judith typically acts.

5. Turning against self: The cathartic transformation of impulses causing intrapsychic conflict into exaggerated negative qualities and attributes turned inward and ascribed to the self.

Turning against the self as a defense: Judith believes the reason she was laid off is because she was a terrible employee and incompetent.

6. **Turning against others:** The cathartic transformation of impulses causing intrapsychic conflict into exaggerated blame and attributes turned outward and ascribed to others.

Turning against others as a defense: Judith believes that it was her boss's fault that she was laid off because she was conspiring behind her back.

15. RATIONALIZATION

DEFINITION OF RATIONALIZATION

Rationalization is the cathartic transformation of an impulse causing intrapsychic conflict into a rational sounding and reassuring but distorted explanation. There is a change in the cognitions associated with the impulse and there is a rational explanation that resolves the perception of a conflict. This catharsis allows the ego to defend against the impulse by dealing with it through a distorted explanation that does not accurately reflect the impulse.

PROCESS TO CODE RATIONALIZATION

1. There is a threatening or anxiety provoking impulse that causes intrapsychic conflict.
2. There is a rational sounding and reassuring but distorted explanation for the impulse.
3. By engaging in rationalization there is a catharsis of the impulse and the conflict is at least temporarily relieved or resolved.

CASE EXAMPLES

1. After stealing a sum of money from a wealthy family, Kate protects herself from feelings of guilt by emphasizing the family's secure financial status and assuring herself that they wouldn't grieve the loss of such an insignificant amount.
 2. Following a first date, Michael eagerly awaited Christina's phone call each day for a week, but she did not call. To avoid feelings of rejection and sadness, Michael insisted that Christina must have been too busy with work and school.
 3. Elizabeth has a tendency to attribute her son's successes to his intelligence and ability but thinks his poor performance is due to lack of effort and laziness rather than his failure to understand the material.
1. Bradley, a company employee who worked his way up the corporate ladder by unfair means, rationalizes that he must obviously be more resourceful and hard-driving than his fellow employees, since everyone engages in similar behaviour.

SIMILAR DEFENSE MECHANISMS AND DIFFERENTIATING FEATURES

Rationalization: The cathartic transformation of impulses causing intrapsychic conflict into rational sounding and reassuring but distorted explanations.

Example: Jason is upset at failing his chemistry class.

Rationalization as a defense: Jason believes that the reason he failed was because the instructor did not mark on a bell curve and wrote the exam such that only a few people in the class would pass.

1. **Isolation:** The cathartic division of impulses causing intrapsychic conflict such that affect is lost while the associated veridical idea of the impulses is retained.

Isolation as a defense: Jason, a chemistry major, knows he is failing the class but cannot identify his feelings.

2. **Turning against self:** The cathartic transformation of impulses causing intrapsychic conflict into exaggerated negative qualities and attributes turned inward and ascribed to the self.

Turning against self as a defense: Jason believes that he is stupid and will never succeed at anything.

3. **Projection:** The cathartic placing of impulses causing intrapsychic conflict onto another non-self object.

Projection as a defense: Jason comments to a friend that he (the friend) must be upset about failing chemistry since it is his major.

4. **Intellectualization:** The cathartic transformation of impulses causing intrapsychic conflict into abstract generalizations.

Intellectualization as a defense: Jason believes that he is failing because he lives in an age of increasing intellectual demand and competition from foreign universities and that the standards in the natural sciences must be such that only the academically elite succeed.

5. **Undoing:** The transformation of impulses causing intrapsychic conflict into symbolic gestures as a means of negating or making amends for the impulses.

Undoing as a defense: In order to improve his performance Jason buys a day timer, six different coloured high-lighters, and a pocket memo-

minder. Jason plans his study schedule each morning and noon according to a colour scheme corresponding to the components of the chemistry class, he then uses his pocket memo-minder to indicate what he should be studying.

6. Neurotic denial: The cathartic division of impulses causing intrapsychic conflict by refusing to consider or acknowledge their implications.

Neurotic denial as a defense: Jason believes that even though he is failing chemistry it will in no way affect him becoming a chemist.

7. Turning against others: The cathartic transformation of impulses causing intrapsychic conflict into exaggerated blame and attributes turned outward and ascribed to others.

Turning against others as a defense: Jason believes that he is failing because his professor did not teach well.

16. INTELLECTUALIZATION

DEFINITION OF INTELLECTUALIZATION

Intellectualization is the cathartic transformation of impulses causing intrapsychic conflict into abstract generalization. There is a change in the cognitions associated with the impulse and there is an abstract explanation that resolves the perception of a conflict. This catharsis allows the ego to defend against the impulse by dealing with it through abstract generalizations that do not accurately reflect the impulse.

PROCESS TO CODE INTELLECTUALIZATION

1. There is a threatening or anxiety provoking impulse that causes intrapsychic conflict.
2. There is an abstract and generalized explanation for the impulse.
3. By engaging in intellectualization there is a catharsis of the impulse and the conflict is at least temporarily relieved or resolved.

CASE EXAMPLES

1. While describing her stormy relationship with her deceased mother, Tammy concluded that her mother was a rather passive individual and was in many ways an archetypical female of her generation.
2. After an unpleasant confrontation with a co-worker, Jason sat down at his desk and began to analyze the situation in terms of Organizational Behaviour theory.
3. Jo-Ann had recently been involved in an intense relationship with a man whom she had suspected of cheating on her. After the relationship ended, she insisted that they discuss the factors that had led to their break-up in terms of society's increasing acceptance of promiscuous behaviour.
4. "Basic Instinct star Sharon Stone and country singer Dwight Yoakam were a sizzling couple for a month in 1991. Then she gave new meaning to the expression 'stone cold' revealing, 'Honey, a dirt sandwich is better than Dwight Yoakam'. He said, 'I think that the gross sensationalism generated by our four-week relationship is a tragic commentary on society's infatuation with any form of celebrity'". - People Magazine

SIMILAR DEFENSE MECHANISMS AND DIFFERENTIATING FEATURES

Intellectualization: The cathartic transformation of impulses causing intrapsychic conflict into abstract generalization.

Example: Christopher is upset and blames his wife for the breakdown of their marriage and their divorce.

Intellectualization as a defense: Christopher describes the breakdown of his marriage as inevitable given the social mores of society and the decline of the traditional family.

1. **Isolation:** The cathartic division of impulses causing intrapsychic conflict such that affect is lost while the associated veridical idea of the impulses is retained.

Isolation as a defense: Christopher is not at all emotional or bothered by the breakdown of his marriage or the loss of his wife of fifteen years.

2. **Turning against self:** The cathartic transformation of impulses causing intrapsychic conflict into exaggerated negative qualities and attributes turned inward and ascribed to the self.

Turning against self as a defense: Christopher believes that it was his fault that his marriage broke down because he was not able to devote enough attention to his wife.

3. **Projection:** The cathartic placing of impulses causing intrapsychic conflict onto another non-self object.

Projection as a defense: Christopher believes that his wife is upset with him, and that she blames him for the breakdown of their marriage.

4. **Rationalization:** The cathartic transformation of impulses causing intrapsychic conflict into rational sounding and reassuring but distorted explanations.

Rationalization as a defense: Christopher explains the breakdown of his marriage in terms of the financial pressures associated with a larger household and caring for two people.

5. **Undoing:** The transformation of impulses causing intrapsychic conflict into symbolic gestures as a means of negating or making amends for the impulses.

Undoing as a defense: Christopher calls his ex-wife six times a day to ensure that she is alright and makes a list of where he will be each day, with phone numbers to give to her, should she need to contact him in an emergency.

6. Neurotic denial: The cathartic division of impulses causing intrapsychic conflict by refusing to consider or acknowledge their implications.

Neurotic denial as a defense: Christopher believes that even though he and his wife have divorced, they should still be able to live together and their lives should not change.

7. Turning against others: The cathartic transformation of impulses causing intrapsychic conflict into exaggerated blame and attributes turned outward and ascribed to others.

Turning against others as a defense: Christopher believes that it was his wife's fault that he ended up getting a divorce because she was constantly undermining his authority.

17. FANTASY

DEFINITION FANTASY

Fantasy is the cathartic escape from an impulse causing intrapsychic conflict by using transient fantasies, excessive daydreaming, or imaginary achievements.

There is a change in the original goal of the impulse such that there is symbolic wish fulfilment of the goal. This catharsis allows the ego to defend against the impulse by escaping from it and its conflict.

PROCESS TO CODE FANTASY

1. There is a threatening or anxiety provoking impulse that causes intrapsychic conflict.
2. There is use of transient fantasy, excessive daydreaming, or imaginary achievements.
3. By engaging in fantasy there is a catharsis of the impulse and the conflict is at least temporarily relieved or resolved.

CASE EXAMPLES

1. When asked by her best friend if she was having problems in her marriage, Sally became tense and looked out the window. Her facial expression then suddenly became relaxed and dreamy as she daydreamed about what a perfect relationship would be like. She smiled, turned back to her friend and said that all was fine.
2. Luke, who has been living in poverty, finds temporary relief from the stress of his circumstances through the use of fantasy. He sometimes imagines that he will marry a wealthy and beautiful woman.
3. Jessica, who has always wanted children but has been unable to conceive, finds out that she is infertile. From time to time she imagines that she is pregnant and thinks about what she would name the baby.
4. Feeling extremely angry and misunderstood by his partner, Timothy entertains a fantasy of tying her to a chair and gagging her, while he walks around her ranting and raving about the reasons for his anger and her inability to understand the obvious.

SIMILAR DEFENSE MECHANISMS AND DIFFERENTIATING FEATURES

Fantasy: The cathartic escape from impulses causing intrapsychic conflict by using transient fantasies, excessive daydreaming, or imaginary achievements.

Example: Catherine has been trying to have a baby for the last five years and has been unsuccessful.

Fantasy as a defense: Catherine daydreams about having children and how wonderful it would be to be a mother.

1. **Dissociation:** The cathartic escape from impulses causing intrapsychic conflict by temporarily losing a sense of the self.

Dissociation as a defense: Catherine loses her sense of self and finds herself in a strange part of town unaware of her identity or how she got to that part of town.

2. **Isolation:** The cathartic division of impulses causing intrapsychic conflict such that affect is lost while the associated veridical idea of the impulses is retained.

Isolation as a defense: Catherine finds that she is aware of all the facts and evidence about why she cannot have children, but has no feelings about the matter.

3. **Psychotic denial:** The cathartic escape from impulses causing intrapsychic conflict by breaking from reality and failing to see or perceive external reality.

Psychotic denial as a defense: Catherine believes that she actually has children and talks to them.

4. **Repression:** The cathartic escape from impulses causing intrapsychic conflict by banishing the impulses from awareness so there is no memory or affect remaining.

Repression as a defense: Catherine cannot easily remember ever wanting to have children or trying to have children.

5. **Neurotic denial:** The cathartic division of impulses causing intrapsychic conflict by refusing to consider or acknowledge their implications.

Neurotic denial as a defense: Catherine believes that even though she has been unable to have children over the last ten years she may still become pregnant in the near future.

18. PSYCHOTIC DENIAL

DEFINITION OF PSYCHOTIC DENIAL

Psychotic denial is the cathartic escape from an impulse causing intrapsychic conflict by breaking from reality and failing to see or perceive external reality. There is a change in the self such that there is a denial of reality. Psychotic denial affects the perception of external reality more than the perception of internal reality. This catharsis allows the ego to defend against the impulse by failing to perceive the reality causing the impulse.

PROCESS TO CODE PSYCHOTIC DENIAL

1. There is a threatening or anxiety provoking impulse that causes intrapsychic conflict.
2. There is a temporary break from external reality.
3. By engaging in psychotic denial there is a catharsis of the impulse and the conflict is at least temporarily relieved or resolved.

CASE EXAMPLES

1. Jennifer, a 26 year old single woman, refused to believe that she was pregnant and attributed the feeling she had to gaseous distension. She did not acknowledge the pregnancy even as she was going through contractions and labour. When presented with her new child she refused to believe it was hers since she was never pregnant.
2. Nigel lost his father to a car accident while he was away on business. Nigel's father had always made a point of calling home to talk to him while he was travelling. Every night Nigel sits by the telephone waiting for his father to call at his usual time.
3. Kerrie, an elderly woman who recently lost her husband of fifty years to a heart attack, still lays out his paper and pipe on the coffee table. She spends most of her days watching television and talking to the chair her deceased husband used to sit in as if he was still there.
3. Carlton, a teenage boy, is diagnosed with leukaemia. As he grows sicker, he becomes more resolute that he is perfectly healthy and that any discomfort he is

experiencing is due to the way the doctors and nurses are treating him. He believes that they are actually trying to kill him with what they call a 'treatment.'

SIMILAR DEFENSE MECHANISMS AND DIFFERENTIATING FEATURES

Psychotic denial: The cathartic escape from impulses causing intrapsychic conflict by breaking from reality and failing to see or perceive external reality.

Example: Derek recently lost his daughter Samantha in a car accident.

Psychotic denial as a defense: Derek still talks to Samantha and brings her home gifts.

1. **Dissociation:** The cathartic escape from impulses causing intrapsychic conflict by temporarily losing a sense of the self.

Dissociation as a defense: Derek loses his sense of self and finds himself unaware of who he is and in a strange part of the city, unaware of how he got there.

2. **Isolation:** The cathartic division of impulses causing intrapsychic conflict such that affect is lost while the associated veridical idea of the impulses is retained.

Isolation as a defense: Although Derek loved his daughter very much, he is not at all sad that she has died, despite knowing all the details of the accident.

3. **Neurotic denial:** The cathartic division of impulses causing intrapsychic conflict by refusing to consider or acknowledge their implications.

Neurotic denial as a defense: Derek believes that his daughter's death will only affect him minimally.

4. **Repression:** The cathartic escape from impulses causing intrapsychic conflict by banishing the impulses from awareness so there is no memory or affect remaining.

Repression as a defense: Derek fails to remember that his daughter has died unless directly confronted.

5. **Fantasy:** The cathartic escape from impulses causing intrapsychic conflict by using transient fantasies, excessive daydreaming, or imaginary achievements.

Fantasy as a defense: Derek daydreams and imagines what he would be doing with his daughter if she were alive.

19. UNDOING

DEFINITION OF UNDOING

Undoing is the transformation of an impulse causing intrapsychic conflict into symbolic gestures as a means of negating or making amends for the impulse.

There is a change in the original goal of the impulse such that it is acted out symbolically or ritualistically. This catharsis allows the ego to defend against the impulse by making amends for it through an unconscious symbolic penance.

PROCESS TO CODE UNDOING

1. There is a threatening or anxiety provoking impulse that causes intrapsychic conflict.
2. There is performance of some ritual or habit.
3. By engaging in undoing there is a catharsis of the impulse and the conflict is at least temporarily relieved or resolved.

CASE EXAMPLES

1. Ken strongly dislikes the family dog but his kids love it. Each morning before work, Ken checks repeatedly to make sure that the screen door is open (so the dog can get in to get his food and hence not starve to death or dehydrate) and is often late for work due to this frequent checking.
2. Sarah is very upset with her husband. While making his lunch each morning, she checks and rechecks that the rat poison is still in the shed (and therefore has not been mistakenly used as salt on her husband's sandwich). She feels relieved, for the time being, after having checked.
3. Bill is anxious about passing his written driving test. He spends hours and hours organizing his study space until he has little time left to study.
6. Anne is pushed into covering extra flights at the airport. She does not like having to fly so often each day. Before taking off, she repeatedly checks the oil pressure gauge to make sure it is within safe limits (and hence won't cause the plane to crash) and this reduces her anxiety.
7. Paul becomes anxious when giving oral presentations and unconsciously and repetitively strokes his beard.

SIMILAR DEFENSE MECHANISMS AND DIFFERENTIATING FEATURES

Undoing: The transformation of impulses causing intrapsychic conflict into symbolic gestures as a means of negating or making amends for the impulses.

Example: Mark is anxious to impress his new employer with his business skills.

Undoing as a defense: Mark constantly makes and checks lists of things to be completed, often at the expense of actually completing assignments.

1. Sublimation: The cathartic transformation of impulses causing intrapsychic conflict into socially acceptable and productive activities or behaviours.

Sublimation as a defense: Mark writes a book on how to manage time.

2. Reaction Formation: The cathartic transformation of impulses causing intrapsychic conflict into exaggerated and opposite impulses.

Reaction Formation as a defense: Mark becomes uncaring and cavalier towards work and his employer.

3. Isolation: The cathartic division of impulses causing intrapsychic conflict such that affect is lost while the associated veridical idea of the impulses is retained.

Isolation as a defense: Mark recognizes that there is a lot of work to be done but has little feeling about the amount of work or his ability to complete the work.

4. Displacement: The cathartic redirection of impulses causing intrapsychic conflict towards an object that is perceived as less threatening.

Displacement as a defense: Mark goes home and expresses concern and anxiety over his children's lack of progress in school.

5. Regression: The cathartic discharge of impulses causing intrapsychic conflict through reverting to an earlier developmental behaviour that was previously adaptive.

Regression as a defense: Mark sucks his thumb every time he becomes concerned over the amount of work he has to complete.

6. **Acting out:** The cathartic discharge of impulses causing intrapsychic conflict through impulsive or destructive behaviour without thought of the consequences of such actions.

Acting out as a defense: Mark yells at his boss and co-workers and breaks anything he can find in his office.

7. **Passive aggression:** The cathartic redirection of impulses causing intrapsychic conflict by expressing them indirectly or through indirect passive means rather than directly.

Passive aggression as a defense: Mark unconsciously does not pass on information to his co-workers when his boss asks him to, resulting in his co-workers handing in assignments late or incomplete.

20. PASSIVE AGGRESSION

DEFINITION OF PASSIVE AGGRESSION

Passive aggression is the cathartic redirection of impulses causing intrapsychic conflict by expressing them indirectly or through indirect passive means rather than directly. There is a change in the original goal of the impulse such it is discharged indirectly and without knowledge (i.e., Unconsciously). This catharsis allows the ego to defend against the impulse without directly experiencing the adverse consequences associated with direct expression of the impulse or acknowledging the impulse.

PROCESS TO CODE PASSIVE AGGRESSION

1. There is a threatening or anxiety provoking impulse that causes intrapsychic conflict.
2. There is an indirect expression of the impulse through passive means.
3. By engaging in passive aggression there is a catharsis of the impulse and the conflict is at least temporarily relieved or resolved.

CASE EXAMPLES

1. John was rather shy and when he finally worked up the courage to ask Susan out on a date to see a concert, she laughed in his face. He then went home without saying a word or doing anything. Two days later, after having learned that her favourite band was going to be the opening act, Susan changed her mind and agreed to go with him. He showed up the night of the concert too late to get them to the concert before the opening act was over. She got angry with him and he couldn't understand why.
2. Laura wanted to get off work early in order to go see her son's first football game. Her boss made her work late. The next morning, he saw that the report he had left her to retype was full of errors. He yelled at her saying she had done it on purpose. She couldn't see why he was so upset with her.
3. Tom wanted to watch a certain program on television but, since it's his roommate's television and since his roommate was already watching a different program, Tom couldn't watch his show. Tom decided to go for a walk outside.

While walking, he "accidentally" tripped over the cable hook-up and the television went dead in the house. His roommate saw what happened and accused Tom of having done it to get back at him. Tom was shocked.

4. Mary knew that Sarah was interested in her good friend Bill, who Mary was also interested in. Sarah asked Mary to pass a note to Bill asking him to meet her at the local bar. Mary forgot to give Bill the note. The next day, Sarah accused Mary of conveniently having forgotten in order to get Bill for herself. Mary was very surprised.

SIMILAR DEFENSE MECHANISMS AND DIFFERENTIATING FEATURES

Passive aggression: The cathartic redirection of impulses causing intrapsychic conflict by expressing them indirectly or through indirect passive means rather than directly.

Example: Belinda wants to go see a different movie than the one her friends want to see.

Passive aggression as a defense: Belinda arrives late causing everyone to miss the movie.

1. **Displacement:** The cathartic redirection of impulses causing intrapsychic conflict towards an object that is perceived as less threatening.

Displacement as a defense: Belinda goes home after seeing the movie she did not want to see and yells at her children.

2. **Isolation:** The cathartic division of impulses causing intrapsychic conflict such that affect is lost while the associated veridical idea of the impulses is retained.

Isolation as a defense: Belinda tells her co-workers how she did not want to go to the movie last night, but when asked how she felt about going did not have any feelings.

3. **Projection:** The cathartic placing of impulses causing intrapsychic conflict onto another non-self object.

Projection as a defense: Belinda complains that her friends never want to see movies.

4. **Repression: The cathartic escape from impulses causing intrapsychic conflict by banishing the impulses from awareness so there is no memory or affect remaining.**

Repression as a defense: Belinda is unable to recall wanting to go to a different movie.

21. REPRESSION

DEFINITION OF REPRESSION

Repression is the cathartic escape from an impulse causing intrapsychic conflict by banishing the impulse from awareness so there is no memory or affect remaining. There is a change in the cognitions associated with the impulse such that memory of the impulse is lost. This catharsis allows the ego to defend against the impulse by removing the impulse from conscious memory.

PROCESS TO CODE REPRESSION

1. There is a threatening or anxiety provoking impulse that causes intrapsychic conflict.
2. There is a repression all memories and affect associated with the impulse.
3. By engaging in repression there is a catharsis of the impulse and the conflict is at least temporarily relieved or resolved.

CASE EXAMPLES

1. Susan's sister discovered that Susan was sexually abused by their uncle while on vacation in Florida. When confronted, Susan was only able to recall with difficulty the abuse or the vacation.
2. After being told about the terrible fights that his parents use to have, Douglas was unable to remember them, even after talking to his brothers and sisters.
3. Tina was asked about her recently deceased husband and how difficult it must have been to lose him. Tina was unable to recall the difficulties experienced after her husband's death.
4. Justin, when asked if there was a time in his life when he was so angry that he felt that he was uncontrolled, responded that he could not remember such an event, although he was sure that he had felt like that at one time or another.

SIMILAR DEFENSE MECHANISMS AND DIFFERENTIATING FEATURES

Repression: The cathartic escape from impulses causing intrapsychic conflict by banishing the impulses from awareness so there is no memory or affect remaining.

Example: Patricia was sexually abused by her last boyfriend Randy.

Repression as a defense: Patricia is unable to remember being abused by Randy.

1. **Dissociation:** The cathartic escape from impulses causing intrapsychic conflict by temporarily losing a sense of the self.

Dissociation as a defense: When someone mentions Randy Patricia loses her sense of self and finds herself in another part of town unaware of who she is or how she got there.

2. **Isolation:** The cathartic division of impulses causing intrapsychic conflict such that affect is lost while the associated veridical idea of the impulses is retained.

Isolation as a defense: Patricia is able to recall the details of the abuse but unable to remember how she felt at the time, or how she feels presently.

3. **Projection:** The cathartic placing of impulses causing intrapsychic conflict onto another non-self object.

Projection as a defense: Patricia accuses others of suspecting her of sexually abusing her children.

4. **Psychotic denial:** The cathartic escape from impulses causing intrapsychic conflict by breaking from reality and failing to see or perceive external reality.

Psychotic denial as a defense: Patricia refuses to believe that she was ever abused.

5. **Neurotic denial:** The cathartic division of impulses causing intrapsychic conflict by refusing to consider or acknowledge their implications.

Neurotic denial as a defense: Patricia remembers that she was abused but is unable to see how the abuse relates to her current emotional problems, insisting the two are separate.

22. NEUROTIC DENIAL

DEFINITION OF NEUROTIC DENIAL

Neurotic denial is the cathartic division of an impulse causing intrapsychic conflict by refusing to consider or acknowledge its implication. There is a change in the cognitions associated with the impulse such that the logical consequences of impulse are not seen. This catharsis allows the ego to defend against the impulse by failing to acknowledge the implications of the impulse.

PROCESS TO CODE NEUROTIC DENIAL

1. There is a threatening or anxiety provoking impulse that causes intrapsychic conflict.
2. There is banishment from awareness of the consequences or implications of the impulse.
3. By engaging in neurotic denial there is a catharsis of the impulse and the conflict is at least temporarily relieved or resolved.

CASE EXAMPLES

1. Even though Jayne recently lost a leg in a car accident, she continues to maintain that her lifestyle will not change. She responds by saying that she is feeling fine.
2. Tom claimed he would lose twenty pounds by the end of the month, even though he would not give up his daily snacks and refused to exercise.
3. After her boyfriend left her, Julia told everyone it didn't bother her and she believed that their relationship would remain unchanged.
4. Bob's parents were considering divorce. Bob, however, maintained that even if they did divorce they would still remain as a family.

SIMILAR DEFENSE MECHANISMS AND DIFFERENTIATING FEATURES

Neurotic denial: The cathartic division of impulses causing intrapsychic conflict by refusing to consider or acknowledge their implications.

Example: Adam is failing at university.

Neurotic denial as a defense: Adam maintains that he will still receive an A average at the end of the year.

1. **Rationalization:** The cathartic transformation of impulses causing intrapsychic conflict into rational sounding and reassuring but distorted explanations.
Rationalization as a defense: Adam believes that the professor only allows five percent of the class to pass any one test, therefore his grades are not really a reflection of his true ability.
2. **Intellectualization:** The cathartic transformation of impulses causing intrapsychic conflict into abstract generalizations.
Intellectualization as a defense: Adam believes that because of the climate of political correctness, and the affirmative action policy of the university, it is not possible for a white male to succeed at university.
3. **Fantasy:** The cathartic escape from impulses causing intrapsychic conflict by using transient fantasies, excessive daydreaming, or imaginary achievements.
Fantasy as a defense: Adam fantasizes about winning the university gold medal for academic achievement.
4. **Psychotic denial:** The cathartic escape from impulses causing intrapsychic conflict by breaking from reality and failing to see or perceive external reality.
Psychotic denial as a defense: Adam denies that he has failed university and been kicked out even though the registrar has not allowed him to register for classes.
5. **Passive aggression:** The cathartic redirection of impulses causing intrapsychic conflict by expressing them indirectly or through indirect passive means rather than directly.
Passive aggression as a defense: Adam continually comes late to class and disrupts the lectures, but is unaware that he is causing a problem for anyone when he is confronted.
6. **Repression:** The cathartic escape from impulses causing intrapsychic conflict by banishing the impulses from awareness so there is no memory or affect remaining.
Repression as a defense: Adam can not remember ever having taken a course at university that he found difficult or failed.

23. GRANDIOSITY

DEFINITION OF GRANDIOSITY

Grandiosity is the cathartic transformation of an impulse causing intrapsychic conflict into an ever-present assumption of one's specialness and superiority. Grandiosity tends to be a way that individual's react to all environments and impulses, such that there is a change in the self and the self is perceived as special and superior. In grandiosity impulses are dealt with by pre-emptively assuming one's specialness. This catharsis allows the ego to defend against an impulse by assuming specialness and therefore not having to acknowledge an impulse as threatening.

PROCESS TO CODE GRANDIOSITY

1. There is a threatening or anxiety provoking impulse that is going to cause intrapsychic conflict.
2. There is a continued sense of specialness and superiority.
3. By engaging in grandiosity there is a catharsis of the impulse and the conflict is at least temporarily relieved or resolved.

CASE EXAMPLES

1. Although Peter earned a grade of "C" in Physiological Psychology last term, he remained confident that he would be accepted to the Clinical Psychology PhD Program at the University of British Columbia because of his superior insight into human psychological processes.
2. Mrs. Smith, an insurance saleswoman, quit her job at a large insurance company in order to pursue a profession that was more "in line" with her abilities. She sent applications to the country's most prominent schools. When her husband confronted her with the fact that she only had a high school diploma, she maintained that if she were to get an interview they would surely overlook that minor detail because she was special.
3. After scoring in the lower percentile for an important mid-term, Tristan told everyone he did not even try because highly intelligent people like himself can not be bothered to take such simple and unchallenging exams seriously.

4. Sally put off studying for her physics final exam until the night before. Upon discovering that she had managed to pull off an average mark without much studying, she took this as continued evidence of her above average ability.

SIMILAR DEFENSE MECHANISMS AND DIFFERENTIATING FEATURES

Grandiosity: The cathartic transformation of impulses causing intrapsychic conflict into an ever-present assumption of one's specialness and ones superiority.

Example: Betty was just turned down for a position as a supervisor in the organization she works for.

Grandiosity as a defense: Betty remains confident that she will one day own her own factory because of her specialness and because she is so much smarter than everyone else.

1. **Devaluation:** The cathartic transformation of impulses causing intrapsychic conflict into exaggerated negative qualities and attributes ascribed to the object eliciting the impulses.

Devaluation as a defense: Betty has always maintained that those responsible for promotions are stupid and incompetent, and so wasn't surprised she was turned down.

2. **Rationalization:** The cathartic transformation of impulses causing intrapsychic conflict into rational sounding and reassuring but distorted explanations.

Rationalization as a defense: Betty maintains that she was turned down because there were too many middle-aged women in management and they wanted to hire younger women.

3. **Intellectualization:** The cathartic transformation of impulses causing intrapsychic conflict into abstract generalizations.

Intellectualization as a defense: Betty maintains the reason she was turned down was because the company is a misogynistic institution ruled by those who have access to capital and power and have the means to keep women from gaining intellectual and financial equality.

4. **Fantasy:** The cathartic escape from impulses causing intrapsychic conflict by using transient fantasies, excessive daydreaming, or imaginary achievements.

Fantasy as a defense: Betty dreams about how wonderful it would be to be a giant and crush all those who turned her promotion down.

5. Turning against others: The cathartic transformation of impulses causing intrapsychic conflict into exaggerated blame and attributes turned outward and ascribed to others.

Turning against others as a defense: Betty blames her supervisor for sabotaging her chance at promotion.

24. TURNING AGAINST OTHERS

DEFINITION OF TURNING AGAINST OTHERS

Turning against others is the cathartic transformation of an impulse causing intrapsychic conflict into exaggerated blame, which is then turned outward and ascribed to others. There is a change in the cognitions associated with the impulse such that the blame for the impulse is ascribed to others. This catharsis allows the ego to defend against the impulse by blaming others for its aetiology and for the conflict it causes.

PROCESS TO CODE TURNING AGAINST OTHERS

1. There is a threatening or anxiety provoking impulse that causes intrapsychic conflict.
2. There is a blaming of others for the conflict.
3. By engaging in turning against others there is a catharsis of the impulse and the conflict is at least temporarily relieved or resolved.

CASE EXAMPLES

1. Theodore, a diabetic man, is admitted into the hospital because of his dangerously high blood sugar level. His doctor lectures him on the importance of maintaining his strict low sugar diet. When the doctor leaves, Theodore complains that the only reason he has to stay in the hospital is because the doctor does not know how to treat his illness.
2. When Barbara couldn't find her theatre tickets for the play that was starting in a few hours, her mother suggested that she should buy herself an organizer so that next time she will know where the tickets are. Barbara left the house frustrated and explained to her friends that they could not go to the play because she could not find the tickets in her mother's messy house.
3. After Brent spent all the family's monthly income on new lawn ornaments his wife questioned his ability to handle the finances. She demanded to know why he did not use the money to pay their bills, and suggested to Brent that he should take a money management course. Brent responded to his wife by shouting, "It's not my fault you don't make enough money!"

4. When Christine received her midterm essay back and only received a C she was upset because she knew it would ruin her chances of getting an A in the class. Christine commented to another classmate that the only reason she received a C was because everyone else in the class conspired against her and talked during the most important parts of the lecture so she could not hear the information.

SIMILAR DEFENSE MECHANISMS AND DIFFERENTIATING FEATURES

Turning against others: The cathartic transformation of impulses causing intrapsychic conflict into exaggerated blame and attributes turned outward and ascribed to others.

Example: Kate is having difficulties at work.

Turning against others as a defense: Kate believes that her boss and her co-workers are out to get her fired.

1. Displacement: The cathartic redirection of impulses causing intrapsychic conflict towards an object that is perceived as less threatening.

Displacement as a defense: Kate goes home and yells at her husband.

2. Splitting: The cathartic division of impulses causing intrapsychic conflict by viewing the object related to the impulses as alternately all good or all bad.

Splitting as a defense: Kate believes that her boss is the worst boss ever (sometimes) and the best boss ever (other times).

3. Devaluation: The cathartic transformation of impulses causing intrapsychic conflict into exaggerated negative qualities and attributes ascribed to the object eliciting the impulse.

Devaluation as a defense: Kate believes the reason she is having difficulty at work is because her co-workers have always been too stupid to work with.

4. Projection: The cathartic placing of impulses causing intrapsychic conflict onto another non-self object.

Projection as a defense: Kate complains that she is not having difficulty at work but those around her are.

5. **Neurotic denial: The cathartic division of impulses causing intrapsychic conflict by refusing to consider or acknowledge their implications.**

Neurotic denial as a defense: Kate denies that any difficulties she may be experiencing at work will have any influence over her job performance evaluation.

25. IDEALIZATION

DEFINITION OF IDEALIZATION

Idealization is the cathartic transformation of an impulse causing intrapsychic conflict into positive qualities ascribed to the object causing the impulse, and in turn then gaining ego strength from associating with the object. There is a change in the self such that an impulse is dealt with by putting other object up and therefore ensuring that the self is not threatened. This catharsis allows the ego to defend against the impulse by idealizing the object causing the conflict.

PROCESS TO CODE IDEALIZATION

1. There is a threatening or anxiety provoking impulse that causes intrapsychic conflict
2. There is an attribution of exaggerated positive qualities to the object causing the impulse and thereby a gain in ego strength from association with the object.
3. By engaging in idealization there is a catharsis of the impulse and the conflict is at least temporarily relieved or resolved.

CASE EXAMPLES

1. Jeff, who feels insecure about his own intellectual standing, exaggerates the intelligence and abilities of his thesis supervisor and feels good about himself because he works with this supervisor.
2. Cassandra experiences an increase in self-esteem after she begins affiliating with the so-called 'popular' clique at school. She feels better about herself because she is now associating with people whose social status she holds in awe.
3. Ryan constantly comments on the physical attractiveness of his girlfriend, which serves to boost his own self-image because she has chosen to associate with him over anyone else.
4. Cheryl, who has just entered the military, comments on how difficult it is to get in and how only the best students are accepted and complete the rigorous program, thereby deriving self-esteem from being part of this elite group.

SIMILAR DEFENSE MECHANISMS AND DIFFERENTIATING FEATURES

Idealization: The cathartic transformation of impulses causing intrapsychic conflict into exaggerated positive qualities ascribed to the object causing the impulses, and in turn then gaining ego strength from then associating with the object.

Example: Henry is anxious about completing his thesis on time because of the demands his supervisor places on him.

Idealization as a defense: Henry becomes less anxious when he realizes that his supervisor is one of the most experienced and productive researchers in the field, and of all possible students his supervisor chose Henry.

1. **Splitting:** The cathartic division of impulses causing intrapsychic conflict by viewing the object related to the impulses as alternately all good or all bad.

Splitting as a defense: Henry thinks that his supervisor is the best mentor (sometimes) and the worst mentor (other times).

2. **Identification with the aggressor:** The cathartic transformation of impulses causing intrapsychic conflict through identifying with the object causing the impulses.

Identification with the aggressor as a defense: Henry becomes less anxious when he takes on the interpersonal style of his supervisor.

3. **Rationalization:** The cathartic transformation of impulses causing intrapsychic conflict into rational sounding and reassuring but distorted explanations.

Rationalization as a defense: Henry becomes less anxious when he explains that his supervisor has been a researcher longer than any other faculty member, and that with age comes wisdom.

4. **Grandiosity:** The cathartic transformation of impulses causing intrapsychic conflict into an ever-present assumption of one's specialness and one's superiority.

Grandiosity as a defense: Henry has always thought that he is a great student and that one day he will become famous and surpass his supervisor.

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