Adaptive Mental Mechanisms

Their Role in a Positive Psychology

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Psychology needs a metric for positive mental health that would be analogous to the IQ tests that measure above average intelligence. The Diagnostic and Statistical Manual of Mental Disorders, 4th ed. (DSM-IV; American Psychiatric Association, 1994) has labeled these mental mechanisms defenses and has organized them in a hierarchical Defensive Function Scale. Included within the "high adaptive level" of DSM-IV are the defenses of altruism, humor, sublimation, and suppression. These adaptive mental mechanisms "maximize gratification and allow conscious awareness of feelings, ideas and their consequences." (American Psychiatric Association, 1994, p. 752.)

In many ways, the first two classes of coping are superior to the third. Most important, seeking social support and cognitive strategies are both under volitional control and can affect the real world. In three ways, however, the involuntary defenses or coping processes are superior to voluntary coping processes. First, as I demonstrate in this article, involuntary defenses are independent of education and social privilege. Second, they can regulate people's perceptions of those internal and external realities that they are powerless to change. Third, the adaptive defenses can turn lead into gold. By this I mean such processes can serve as transformative agents in the real world.

Let me offer an analogy. If a person who cuts a small artery lacks the cognitive strategies (provided to health professionals through expensive education) to stop the hemorrhage and lacks the social support of access to physicians (provided to the middle class through expensive health insurance), the person can still cope with the hemorrhage with inborn defenses. He or she can stop the bleeding through involuntary, transformative, and highly complex clotting mechanisms. Yet, such clotting mechanisms may be denied to royalty afflicted with hemophilia. In analogous fashion, when cognitive solutions and social supports are absent, the psychologically resilient—from all walks of life—achieve similar homeostatic alchemy through involuntary mental defenses that alter perception of internal and external reality.

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For example, at age 31, a suicidal but only partially deaf musician had written of his loss of hearing, "Oh, if I were rid of this affliction, I could embrace the world" (Forbes, 1969, p. 286). At 54, the utterly deaf but no longer suicidal musician immortalized Schiller's "Ode to Joy" ("Be embraced all ye millions with a kiss for all the world") in the lyrical, life-affirming chorus of his Ninth Symphony. But how can psychology differentiate the transformative denial that Beethoven deployed to overcome depression by writing a hymn to joy from the mental mechanisms of psychosis such as projection and psychotic denial? Clearly, the answer is important.

As a start, mature mental health always involves affect recognition. Beethoven did not totally deny his real depression, nor was he overwhelmed by it. Thus, we have evidence that Beethoven's defensive behavior (aka, creative prodigy) did not reflect complete denial of affect as do less adaptive defenses. Throughout his composition of the Ninth Symphony, he remained conscious of his pain. For example, on a draft version of one instrumental recitative he had scribbled, "No, this would remind us too much of our despair" (Forbes, 1969, p. 892). Equally important was Beethoven's defensive use of sublimation, which not only made him feel subjectively better, but also was of objective value to the real world.

Adaptive defenses are essential to positive mental health. Defenses reduce conflict and cognitive dissonance during sudden changes in internal and external reality. If not modified, sudden changes result in anxiety and/or depression. First, defense mechanisms can restore psychological homeostasis by ignoring or deflecting sudden increases in affect and instinctual press. For example, when the Soviets liberated the first Nazi death camp, Maidencik, the New York Times, denied its unbearable horror by reporting the news as a Soviet propaganda ploy. Second, defense mechanisms can provide a mental time out to mitigate changes in reality and self-image that cannot be immediately integrated—for example, after major surgery or promotion. Third, defenses transmute unsolvable conflict with important people, living or dead. Finally, defenses soften conflicts of conscience—for example, after putting a parent in a nursing home. In short, defenses shield people from sudden changes in affect, reality, relationships, or conscience.

For many years, defense mechanisms have been deservedly popular in experimental psychology, because of difficult empirical verification. Over the past 20 years, the idea of motivational adaptation has re-entered the literature of cognitive psychology under such rubrics as hardiness (Kobasa, Maddi, & Kahn, 1982), self-deception and emotional coping (Lazarus & Folkman, 1984), and illusion (Taylor, 1989). Defense mechanisms are clearly as important in reducing anxiety from cognitive dissonance as they are in minimizing anxiety from conflict between conscience and impulse.

In recent years, experimental strategies for studying defense mechanisms have improved (Cramer, 1991; Horowitz, 1988; Vaillant, 1992). Building on the work of Norà Hain (1963) at Berkeley and Elvin Semrad (1967) at Harvard, I have tried to operationalize defenses and to demonstrate their predictive validity (Vaillant, 1971, 1993). Over 30 years, such efforts have met with modest success, and the validity of an adaptive hierarchy of defenses appears clear (Vaillant, 1992). However, as Phoebe Cramer's (1991) encyclopedic review of the methodology for identifying and quantifying defenses has illustrated, no one has yet developed a method for assessing defenses that meets conventional standards for psychometric reliability.

A second reason that defenses have fallen from favor in psychology is that there is no commonly accepted language. For example, within 50 miles of San Francisco, there were recently six competing, nonoverlapping nomenclatures for involuntary coping mechanisms. Each nomenclature was used by a distinguished investigator of stress (Block & Block, 1980; Haim, 1977; Horowitz, 1988; Lazarus & Folkman, 1984; Moos & Billings, 1982; Weinberger, Schwartz, & Davidson, 1979). Rarely, however, did any investigator cite the work of his or her neighbors. The result has been semantic chaos. Recently, the DSM-IV (American Psychiatric Association, 1994) has offered a terminology, a glossary, and a tentative diagnostic axis to provide a common language.

Defenses, no matter how ingeniously assessed, reflect value judgments about mental process, as do process concepts in physics (e.g., forward motion and velocity). All three—velocity, forward motion, and defenses—depend on the vantage point of the observer and involve processes rather than static qualities like mass or intelligence. Nevertheless, if people wish to understand their own lives in time and space, these are judgments worth making.

To overcome relativity, reliability of defense recognition requires longitudinal study. Before I can assert that the Ninth Symphony represents the sublimation of Beethoven’s conflict over abusive father figures, I need objective longitudinal evidence. First, I need Beethoven’s own contemporaneously written diary to document both his despair and his anger at father figures over decades. Second, for objec-
tive assessment, I need behavioral evidence of his defense: a symphony (not just a pencil-and-paper response or a dream report). Finally, I need objective consensus that his creation was empathic art that others valued, not autonomous fantasy that others mocked. Thus, the documented wild cheers of a contemporary, musically sophisticated, Vien-

dese concert audience is more convincing than the false judgment of one 20th century, musically challenged American psychiatrist. Using such triangulation of real symptoms, autobiographical report, and contemporaneously assessed biographical facts to measure invisible mental process is analogous to surveyors using triangulation to assess the height of mountains they cannot climb.

As a method to study defenses, I have used three diverse 50-year prospective studies of lives: Using consensus definitions from the literature (Vaillant, 1971), I selected five mechanisms—humor, altruism, sublimation, anticipation, and suppression—that, first by hypothesis and then by empirical study, appeared adaptive in the three samples. The term adaptive defense, and its synonym healthy denial, have two connotations. The first is transformative (turning lead into gold), and the second is making the best out of a bad situation. Whether such a healing response is viewed as miraculous or merely a patch-up job depends on whether optional wound healing is viewed as a scar or as a result of a delicate bulletin of blood clotting and fibroblast migration—not too much nor too little. Each adaptive or healthy defense involves the bullet of keeping idea and affect, subject and object clearly in mind while simultaneously attenuating the conflict (cognitive dissonance).

In nonconflictual situations, of course, the putative defense mechanisms of anticipation, altruism, and suppression seem quite conscious and voluntary. In highly emotionally charged situations, however, such deployment of these mechanisms can be seen as both transformative and making the best out of a bad situation. A man with a criminal record for the first time "counting to ten" (suppression) while consciously examining his anger, rather than impulsively punching a policeman; a mother rehearsing affectively and realistically, rather than denying, the fact that her child is dying (tampications: a survivor of child abuse, rather than abusing her own children, working in a shelter for survivors of abuse (altruism) are such examples. Such behaviors emerge with maturation as delicate transformative mental balancing acts and not as a result of good advice and self-help cognitive strategies.

The Study of Adult Development

The Study of Adult Development provided the three cohorts of individuals that were used as a prospective and empirical means of triangulating and validating defensive behaviors. Each cohort had been prospectively studied for over half a century; the “College” sample born about 1920 (Heath, 1945), the “Core City” sample of inner-city men born about 1930 (Glueck & Glueck, 1950), and the “Terman” sample of gifted women born about 1910 (Terman, 1925).

For all three samples, the basic methodology of the Study of Adult Development was to keep raters of psychological health and prospective behavioral outcome unaware of defense assessment and to keep raters of defenses unaware of evidence of positive mental health and future adaptation. Taken individually, these three now elderly Caucasian samples can hardly be viewed as representative of the general population. However, the three samples have the virtue of being vastly different from each other and belonging to historical birth cohorts up to 20 years apart. Within each sample, there was considerable homogeneity. Thus, the between-group similarities and the within-group differences may be generalizable to some other samples. More important, prospective study permitted defensive altruism to be distinguished from simple kindness and defensive projection to be distinguished from the vigilant recognition of real persecution.

The College Sample

The Grant Study (Heath, 1945; Vaillant, 1977) began at the Harvard University Health Services in 1938. The study was undertaken by W. T. Grant because, “Large endowments have been given and schemes put into effect for the study of the ill, the mentally and physically handicapped. . . . Very few have thought it pertinent to make a systematic inquiry into the kinds of people who are well and do well” (Heath, 1945). Sixty years ago, then, the Grant Study anticipated the need for a positive psychology.

In the selection process, about 40% of each Harvard class was arbitrarily excluded for academic reasons. The health service records of the remaining 60% of each class were then screened, and half were excluded because of evidence of physical or psychological disturbance. The college seniors then selected one third of the remaining 300 men who they thought would do well. Between 1939 and 1942, 208 sophomores were selected for study. For half a century, all but 20 of the men have continued to participate in this study of positive psychology with remarkable loyalty. They have received questionnaires about every 2 years, physical examinations every 5 years, and interviews about every 15 years.

Socioeconomically, the College sample men were drawn from a privileged group but not exclusively so. Although one third of the men’s fathers had some professional training, one half of the men’s parents never graduated from college. Although one half of the men had some private education, half of the men were on scholarship and/or had to work during the academic term to earn tuition. In adult life, the College sample enjoyed the income and social status of corporate managers, yet they drove the battered cars and pursued the hobbies, politics, and lifestyle of college professors.

The Core City Sample

These 450 men represent a very different cohort but one also chosen for relative mental health. In junior high school, they were selected as nondelinquent controls for a prospective study of juvenile delinquency. The study was conducted by Sheldon and Eleanor Glueck at Harvard Law School and led to their landmark book, *Criminal Juvenile Delinquency* (Glueck & Glueck, 1950, 1968). Like the College men, the Core City men were studied originally by a multidisciplinary team of physicians, psychologists, psy-
chiatrists, social investigators, and physical anthropologists. The Core City men were interviewed at ages 14, 25, 32, and 47 (Vaillant, 1995).

The Core City sample came from the 60% of Boston

census tracts with the highest rates of juvenile delinquency. The boys’ average IQ was 95, and 61% of their parents were

foreign born. In childhood, half of the Core City men had

lived in clearly blighted slum neighborhoods. Half came from

families known to five or more social agencies, and more than

two thirds of their families had recently been on welfare. Over

the years, however, this group has experienced marked up-

ward social mobility (Long & Vaillant, 1964).

The Terman Women Sample

Through the cooperation of Robert Sears and Albert Hauser, I obtained access to a Stanford University (Terman women) cohort of gifted women studied since 1920. The 90 women

that make up the current study sample are a representative

subsample of the 672 women in Terman’s original cohort of

gifted California public school children (Holahan & Sears, 1995; Terman, 1925; Terman & Odell, 1959).

The average IQ of the Terman women—mean

IQ of 151—was a social asset. Their mental health was

demonstrably better than that of their California classmates. They showed significantly more humor, common

sense, perseverance, leadership, and even popularity than

their school peers. Up to the age of 78, the mortality of the

Terman women has been only half of what would be

expected for White American women in their birth cohort.

Investigators followed the Terman sample by question-

naire every five years and by personal interview in 1940 and 1950. In 1987, Vaillant and Vaillant (1990a) selected a representative subsample. Of the 90 women

selected, 29 had died and 21 of the surviving women

refused to interview, some because of poor health. We

reinterviewed the remaining 40 women.

Adaptive or Mature Defenses

Adaptive or mature defenses (altruism, sublimation, suppression, humor, anticipation) are common among the

mentally healthy and become more salient as individuals

mature from adolescence to midlife (Vaillant, 1977). In

keeping with the conceptualization of positive psychology, the association of mature defenses with mental health remains whether health is measured by subjective happiness, psychosocial maturity, occupational success, richness and

stability of relationships, or absence of psychopathology (Vaillant, 1992). Individuals with brain damage (e.g., alcohol dependence, schizophrenic relapse, multiple sclerosis) replace adaptive defenses with more maladaptive mechanisms, most notably projection.

Table 1 schematizes the defenses discussed in this article within the adaptive levels suggested by DSM-IV. The table provides an oversimplified schema for the mutually exclusive definitions that contrast the five adaptive defenses listed above with less adaptive mechanisms. Each defense has been characterized by the extent to which it denies or distorts subject and object and idea and affect in the experience of and

expression of impulse. For example, defense mechanisms can

allow a person to ignore the affect (isolation, intellectualization), to ignore the cognitive representation of the affect (projection), to reverse the direction of an impulse (make the self

the object of projection), or to make the object the self (suicide or passive aggression). Each defense has also been characterized by the way in which it modifies the four legacies of conflict—afflict, reality, conscience, and relationships. The high-adaptive-level defenses provide the most balanced re-
sponse to such involuntary homoeostatic distortions of inner and outer reality.

To the beholder, adaptive mechanisms appear as con-

venient virtues, and there is rarely a therapeutic reason to

alter them. Although closer to consciousness than mechani-

sms like projection and repression, mature mechanisms cannot be voluntarily deployed. No one is more transparent

than someone trying to use humor or altruism. No one is

more angry-looking than someone consciously suppressing rage; and when depressed, just try writing Beethoven’s

Ninth Symphony on purpose.

In keeping with positive psychology, adaptive defenses

often appear as moral to the observer as maladaptive defenses appear immoral. The prejudice of projection and the tantrums of acting out appear to others as sins. In contrast, doing as one

would be done by (altruism), a stiff upper lip (suppression), planning for the future (anticipation), the ability not to take one’s self too seriously (humor), and “turning lemons into lemonade” (sublimation) are the very stuff of which a positive psychology should be concerned.

Let me elaborate on the transformative nature of each of

five mature mental mechanisms schematically defined in Table 1.

Altruism

When used to transform conflict, altruism involves getting

pleasure from giving to others what people would themselves

like to receive. For example, victims of childhood sexual

abuse often pathologically cut themselves (turning anger

against the self), abuse children (acting out), or use “narcotic”

compromises such as becoming frigid or joining convents

(reaction formation). Alternatively, and transformatively,

altruistic victims of child abuse might work in shelters for

battered women and in support groups or hotlines for abuse

victims. Often altruism is an adaptive outgrowth of the

defense of reaction formation, a mechanism that can maladap-
tively make the person’s desires all bad and the needs of

others all good. Using reaction formation, an ex-drinker who

suddenly declares drinking as a filthy habit among his friends. Using altruism, the ex-alcoholic who serves as a sponsor to a

new Alcoholic Anonymous member achieves a transforma-
tive process enjoyed by giver and receiver.

My wife, five months pregnant, was interviewing a
couple from the Core City sample to whom our study

offered no compensation. The greatest pain in their life

was having lost six children through Rh incompatibility. As

my wife got up to leave, the childless wife, whose grief and

every can only be imagined, gave my wife a handsome, handme baby sweater. The lives of everyone in the room

had been suddenly enriched.
<table>
<thead>
<tr>
<th>Source of conflict</th>
<th>Realby</th>
<th>Self-object</th>
<th>Object</th>
<th>Expression of impulse</th>
<th>Defensive function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Disavow (object)</td>
<td>Disavowed</td>
<td>Ignored</td>
<td>Ignored</td>
<td>Disavowed</td>
<td>Generalized</td>
</tr>
<tr>
<td>2. Disavow (other)</td>
<td>Disavowed</td>
<td>Ignored</td>
<td>Ignored</td>
<td>Disavowed</td>
<td>Generalized</td>
</tr>
<tr>
<td>3. Passive aggression</td>
<td>Disavowed</td>
<td>Ignored</td>
<td>Ignored</td>
<td>Disavowed</td>
<td>Generalized</td>
</tr>
<tr>
<td>4. Acting out</td>
<td>Disavowed</td>
<td>Ignored</td>
<td>Ignored</td>
<td>Disavowed</td>
<td>Generalized</td>
</tr>
<tr>
<td>6. Forming</td>
<td>Forming</td>
<td>Ignored</td>
<td>Ignored</td>
<td>Forming</td>
<td>Generalized</td>
</tr>
<tr>
<td>7. Phobic projection</td>
<td>Phobic projection</td>
<td>Ignored</td>
<td>Ignored</td>
<td>Phobic projection</td>
<td>Generalized</td>
</tr>
<tr>
<td>8. Paranoid projection</td>
<td>Paranoid projection</td>
<td>Ignored</td>
<td>Ignored</td>
<td>Paranoid projection</td>
<td>Generalized</td>
</tr>
<tr>
<td>9. Dissociation</td>
<td>Dissociation</td>
<td>Ignored</td>
<td>Ignored</td>
<td>Dissociation</td>
<td>Generalized</td>
</tr>
<tr>
<td>10. Displacement</td>
<td>Displacement</td>
<td>Ignored</td>
<td>Ignored</td>
<td>Displacement</td>
<td>Generalized</td>
</tr>
<tr>
<td>11. Repression</td>
<td>Repression</td>
<td>Ignored</td>
<td>Ignored</td>
<td>Repression</td>
<td>Generalized</td>
</tr>
<tr>
<td>12. Displacement of affect</td>
<td>Displacement of affect</td>
<td>Ignored</td>
<td>Ignored</td>
<td>Displacement of affect</td>
<td>Generalized</td>
</tr>
<tr>
<td>13. Sublimation</td>
<td>Sublimation</td>
<td>Ignored</td>
<td>Ignored</td>
<td>Sublimation</td>
<td>Generalized</td>
</tr>
<tr>
<td>14. Suppression</td>
<td>Suppression</td>
<td>Ignored</td>
<td>Ignored</td>
<td>Suppression</td>
<td>Generalized</td>
</tr>
<tr>
<td>15. Anticipation</td>
<td>Anticipation</td>
<td>Ignored</td>
<td>Ignored</td>
<td>Anticipation</td>
<td>Generalized</td>
</tr>
</tbody>
</table>

Note: Dashes indicate sources of conflict or expression of impulse uncorrected in DSM-IV. Diagnostic and Statistical Manual of Mental Disorders (4th ed.; APA: American Psychiatric Association)
Table 3
Late Life Consequences of Adaptive Defenses at Ages 20–47

<table>
<thead>
<tr>
<th>Evidence</th>
<th>Core City [n = 122(^a)]</th>
<th>College [n = 154(^a)]</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Years of education</td>
<td>Adoptiveness of defenses</td>
</tr>
<tr>
<td>Objective evidence</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Income (midlife)</td>
<td>25**</td>
<td>25**</td>
</tr>
<tr>
<td>Psychosocial adjustment (ages 50–63)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>[Vaillant &amp; Vaillant, 1990b]</td>
<td>6</td>
<td>51***</td>
</tr>
<tr>
<td>Social supports(^b) [Vaillant et al., 1998]</td>
<td>12</td>
<td>44***</td>
</tr>
<tr>
<td>Subjective evidence</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Joy in living(^b)</td>
<td>14</td>
<td>37**</td>
</tr>
<tr>
<td>Marital satisfaction (midlife)</td>
<td>.01</td>
<td>30**</td>
</tr>
<tr>
<td>Subjective physical functioning(^b)</td>
<td>.07</td>
<td>32**</td>
</tr>
<tr>
<td>Objective physical health</td>
<td>.09</td>
<td>14</td>
</tr>
</tbody>
</table>

Note. Neuroticism was measured with the NEO Personality Inventory.

\(^a\) Sample size is reduced because men who died before age 85 are included.

\(^b\) Measured at age 65 for the Core City men and measured at age 75 for the College men.

\(^*\) p < .05
\(^**\) p < .01
\(^***\) p < .001 (Spearman rank correlation coefficient was used)

physical disability—up to 30 years later—but such defenses did not predict physical health decline (objective) assessed by an independent internist.

The point of Table 3 is that the relative adaptiveness of defenses (measurement described in Vaillant, 1992, 1993, and schematized in the DSM-IV) may offer as good a metric for positive mental health (Vaillant & Schnurr, 1988) as there is. For two very socioeconomically diverse samples of men, income, objective psychosocial adjustment, social supports, marital satisfaction, subjective physical functioning, and joy in living were more highly correlated with adaptive defenses measured 20 years earlier than with either education or neuroticism.

Specific Examples

Psychology needs to know more not only about the measurement of positive mental health but also about how people exposed to severe risk factors maintain positive mental health. I address four major risk factors: childhood poverty, the physical limitations of old age, stressful life events, and severe combat. First, the 70 Core City men who manifested the most adaptive defenses were just as likely to have come from welfare families in Social Class V (Hollingshead & Redlich, 1958) as were the 73 men with the least adaptive defenses. In contrast, as adults only 1% of men with the most mature defenses but 21% of men with the least mature defenses were in Social Class V. In short, adaptive defenses may catalyze escape from poverty.

Second, Figure 1 depicts the subjective physical functioning at age 65 of those Core City men who were still in good physical health at age 50. In other words, the figure includes only those men whose defense levels could not have been impaired by prior poor health. The more dominant their use of adaptive defenses between ages 20 and 47, the more likely they were at 65 to report being able to climb stairs, walk long distances, and engage in vigorous physical activities that they enjoyed. As Table 3 shows, however, their objective physical health was uncorrelated with defense level.

Figure 1
Core City Men Without Disability at Age 50 Who Were Still Without Disability 15 Years After the Initial Study

![Figure 1](image-url)

Use of Adaptive Defenses

Note. The percentage of men with no significant disability was based on a subjective disability score of 10 through 14. This meant that the men had not given up any major activity and were still able to move heavy furniture and/or chop wood, walk two miles, and climb two flights of stairs without resting, albeit sometimes more slowly. Use of adaptive defenses was rated on a scale from 0 (unimportant or absent) to 5 (style dominant).
Third, the number of stressful life events in the adult lives of the College men from ages 20 to 60 was studied prospectively (Cui & Vaillant, 1998). The number and severity of such life events both predicted—and resulted from—the occurrence of major depressive disorder. Figure 2 illustrates that major depressive disorder occurred only among men with high life stress scores. However, the men who deployed the most adaptive defenses could still experience multiple stressful life events without risk of major depression.

Finally, adaptive defenses also mitigated the strong association between severe combat and later symptoms of post-traumatic stress disorder (PTSD) among the College sample. (In our study, symptoms of PTSD could be almost entirely explained by severity of World War II combat carefully quantified in 1946; Lee, Vaillant, Torrey, & Elder, 1995; Wells & Woods, 1946.) Of the 33 College men who experienced the most severe combat, the 16 men who deployed most adaptive defenses reported an average of 0.19 PTSD symptoms. The 17 men with less adaptive defenses who had similarly high combat exposure reported an average of 1.70 PTSD symptoms, \( n(31) = 2.75, \ p = .01, \) two-tailed. It is significant that prior to the war, the two groups of men did not differ in physical symptoms with stress, and in late middle life they did not differ in neuroticism.

**How Do Defenses Work?**

How do mature defenses work to promote a positive psychology (enhanced ability to work, love, and play) and at the same time to reduce conflict and cognitive dissonance? Table 1 presents a range of defenses rank ordered as in the DSM-IV. The DSM-IV suggests that the mechanisms at "the high adaptive level" not only maximize gratification but also "promote an optimum balance among conflicting motives" (American Psychiatric Association, 1994, p. 732). Again: whether one views such a response as making the best of a bad situation or as transformative depends on the vantage point of the observer. Thus, unlike less adaptive mechanisms, mature defenses synthesize and allocate rather than deny and distort conflicting sources of human behavior like conscience, reality, interpersonal relations, and emotions. The best-of-a-bad-situation view or "optimistic" view, would note that predominant use of adaptive defenses simply means that such individuals did not cope by using less balanced mechanisms like schizoid fantasy and projection, which are strongly predictive of poor outcomes. Unlike "acting out," which denies conscience, or reaction formation, which denies emotion, or schizoid fantasy which denies real people, or projection, which denies the subject, or psychic defenses, which deny objective reality, mature defenses elegantly balance and accommodate these multiple sources of conflict. Ballet dancing, Albert Rothenberg's "Janusian creativity." Beethoven producing a symphony fueled by despair and rage, people with physical disabilities deriving hope and self-esteem from helping others with disabilities all reflect the transformative nature of achieving psychic balance.

Beyond the above suggestions, psychology really does not know how defenses work. Do adaptive defenses reflect inborn traits (e.g., perfect pitch or a capacity for higher mathematics)? Or do adaptive defenses reflect traits that are acquired through education and maturation (e.g., good dictation or a graceful backhand)? Should psychology view adaptive defenses as virtues (like empathy and creativity)? Or should psychology view such defenses as adaptive self-deceptions to resolve conflict as did Anna Freud when she quipped that altruism came not from the goodness "but from the badness of his heart" (Sandler & Freud, 1985, p. 176)? I believe that the correct answer to all four questions is yes, but more research is needed.

As Table 2 shows, the etiology of adaptive defenses is as obscure as the etiology of creativity or athletic prowess. Although genes, social environment, and the absence of brain disease undoubtedly each play a role, the association of adaptive defenses with positive psychology is most pronounced among individuals from dysfunctional families (Vaillant, 1993). The best definition of creativity—or of an adaptive defense—is putting something of value in the world that was not there before. It is the transformative, creative quality that makes the adaptive defenses more than just healthy, wound healing.

**Conclusion**

This article raises questions that must be solved if psychologists are to develop a science of positive psychology. First, how should psychology quantify positive mental health? At present, psychology has no metric except perhaps scores of greater than 85 on the DSM-IV's Axis V (Global Assessment of Functioning). If more reliable meth-
ods for assessing the relative maturity of defenses can be
developed, psychology may gain a means of quantifying the
theoretical formula for positive mental health that Marie Jahoda (1959) offered to psychology 40 years ago. She suggested the same synthesis between affective life and practical reality that is reflected in the conceptualization of adaptive-level defenses. Jahoda suggested that mentally healthy individuals should be oriented toward the future and efficient in problem solving. They should be resistant to stress and perceive reality without distortion. They should possess empathy and be able to love and to play as well as to work. They should remain in touch with their own feelings. In short, they should manifest anticipation, suppression, altruism, humor, and sublimation.

In addition, psychology needs to understand how best to facilitate the transmutation of less adaptive defenses into more adaptive defenses. My own suggestions (Vaillant, 1995) have been to increase social supports and interpersonal safety and second to facilitate the integrity of the central nervous system (e.g., rest, nutrition, and sobriety). However, the newer forms of integrative psychotherapies also can catalyze such change; and throughout this journal issue there are further clues.

REFERENCES