**INTRODUCTION**

Too often, psychiatry has been only preoccupied with mental illness. To paraphrase Mark Twain’s quip about the weather, psychiatry is always talking about mental health, but nobody ever does anything about it. Science has conceptualized the building blocks of nuclear fission more readily than the building blocks of mental health. Thus, with the notable exception of the chapter by Daniel Offer and Melvin Sabshin in the early editions of this textbook, review of other recent major psychiatric textbooks reveals virtually no serious discussion of mental health. One reason for this lack of attention is that the study of positive mental health is a very new field. Only within the last three decades has mental health per se been addressed empirically instead of platonically.

There has been an implicit assumption that mental health could be defined as the antonym of mental illness. In other words, mental health was the absence of psychopathology and synonymous with “normal.” Achieving mental health through the alleviation of gross pathologic signs and symptoms of illness is also the definition of mental health model strongly advocated by third-party payers. Indeed, viewing mental health as simply the absence of mental illness is at the heart of much of the debate concerning mental health policies. The great epidemiological studies of the past half-century have also focused upon who was mentally ill and not who was well. Only the Sterling County Studies by Alexander Leighton came close to defining positive mental health operationally. Mental illness, after all, is a condition that is easy to define reliably, and its limits are relatively clear. As a result, it has been argued that achieving above average mental or physical health is not the province of
medicine, but of education. Such a definition ignores concepts of positive health like physical fitness and cardiac reserve.

Like physical fitness, however, positive mental health is too important to be ignored. To believe mental health is merely a GAF of 70 on Axis V of DSM-IV is to underestimate human potential. Sports medicine does more than mend skier’s broken legs; sports medicine rehabilitates the skier to ski advanced trails once more. Starting early in the last century internists began studying physiology at high altitude and devise measures of positive physical health for athletes, pilots, and finally astronauts. In 1929–1930 at the University of California at Berkeley, the Institute of Human Development was founded by Howard Jones, Nancy Bayley, and Jean McFarlane. Originally, founded to study healthy child development, the Institute was to provide a seminal influence on Erik Erikson’s model of healthy adult development. A decade later, in the late 1930s, Arlie Bock, an internist trained in high-altitude physiology and interested in positive physical health began at the Harvard University Health Services, The Study of Adult Development. The Study was designed as an interdisciplinary study of both mental and physical health. Results from that study, lasting for 70 years, have informed many facets of this chapter.

Although above average mental health is more difficult to define than above average physical fitness, it is important for psychiatrists to emulate sports medicine in order to provide precise definitions and measures of positive mental health. Psychologists have already learned to quantify not only “normal” but better than normal intelligence. Thus, the antonym of mental retardation is not regarded as an IQ of 100 but as an IQ over 130. Psychiatry must follow suit.

Certainly, over the last 70 years psychiatrists have become increasingly involved in mental health consultations to agencies. Rather than merely deciding who is too sick for a job, they are called on to make decisions about who is mentally healthy enough for certain positions—like air controllers and submariners. Analogous to cardiac reserve, the measurement of resilience and of the capacity to withstand adversity are on psychiatry’s psychometric wish list. In addition, interest in the empirical evaluation of psychiatric therapy outcome has also brought the issue of positive mental health into focus. Indeed, one of the weaknesses of much existing work on psychotherapy assessment has been a lack of clarity regarding outcome definitions. For health is not the absence of negatives but the presence of positives.

But the definition of positive mental health is not easy. Several cautionary steps are necessary. The first step in discussing mental health is to note that “average” is not healthy; it always includes mixing in with the healthy the prevalent amount of psychopathology in the population. For example, in the general population “average” weight or eyesight is unhealthy; and if all sources of biopsychosocial pathology were excluded from the population, the average IQ would be significantly above 100. For as with Garrison Keillor’s description of Lake Wobegon youth, mentally healthy children “are all above average.” Being at the center of a normal bell curve of distribution may or may not be healthy. In the case of red blood count, body temperature, or mood the middle of the bell curve is healthy. In the case of eyesight, exercise tolerance or empathy only the upper end of the bell curve is healthy; and in
the case of serum cholesterol, bilirubin and narcissism only the low end of the curve is healthy.

The second cautionary step in discussing mental health is to appreciate the caveat that what is healthy sometimes depends upon geography, culture, and the historical moment. Sickle cell trait is unhealthy in New York City, but in the tropics where malaria is endemic, the sickling of red blood cells may be lifesaving. Punctuality is a virtue in Germany, and sometimes a failing in Brazil. Indeed, some aboriginal Australian languages do not even have a word for time. General George Patton’s competitive temperament was for him a psychological liability in time of peace but a virtue in two World Wars. In World War II paranoid personalities made very poor submariners but excellent airplane spotters.

A third cautionary step is to make clear whether one is discussing trait or state. Who is physically healthier: an Olympic miler disabled by simple but temporary (state) sprained ankle or a Type 1 diabetic (trait) with a temporarily normal blood sugar? In cross-cultural studies such differences become especially important. Superficially, an Indian mystic in a state of trance may resemble a catatonic schizophrenic but not over time.

In defining mental health, the fourth and most important cautionary step is to appreciate the twofold danger of “contamination by values.” On the one hand, cultural anthropology teaches how fallacious any definition of mental health can be. Competitiveness and scrupulous neatness may be healthy in one culture and regarded as personality disorder in another. And, if mental health is “good,” what is it good for? The self or the society? For “fitting in” or for creativity? For happiness or survival? And who should be the judge? Since every culture differs in its diet, the World Health Organization (WHO) should never be called upon to design restaurant menus. For 10 years, Adolf Hitler was a better leader of his country than Jimmy Carter; but by every definition the author knows, Carter had better mental health than Hitler.

Thus, common sense, not post modernism, must prevail. Biology trumps anthropology. Health is the activity of a living body in accordance with its specific excellences.

“What, for example, is a healthy squirrel?” asked Kass, a research professor in bioethics and neurology, “Not a picture of a squirrel, not really or fully the sleeping squirrel, not even the aggregate of his normal blood pressure, serum calcium, total body zinc, normal digestion, fertility, and the like. Rather, the healthy squirrel is a bushy-tailed fellow, who looks and acts like a squirrel; who leaps through the trees with great daring, who gathers, buries, and covers but later uncovers and recovers his acorns; who perches out on a limb cracking his nuts, sniffing the air for smells of danger, alert, cautious, with his tail beating rhythmically; who chatters and plays and courts and mates and rears his young in large improbable looking homes at the tops of trees; who fights with vigor and forages with cunning; who shows spiritedness, even anger, and more prudence than many human beings… Health is a natural standard or norm—not a moral norm, not a ‘value’ as opposed to a ‘fact,’ not an obligation but a state of being that reveals itself in activity.”
It is true that cultural anthropology teaches that almost no form of behavior is considered abnormal in all cultures, but that does not mean that the tolerated behavior is mentally healthy. WHO would be in error to ignore the universal importance to diet of vitamins and of the four basic food groups. Just because until recently Portugal does not recognize alcoholism as an illness, does not reduce the contribution of alcoholism in Lisbon to morbidity. Just because the American Constitution protected the right to own slaves as inalienable did not make slavery mentally healthy for slave or for slave owner. Just because martinis and Coca Cola outsell carrot juice does not make the former healthier. The best way to enrich the current understanding of what constitutes mental health is to study a variety of healthy populations from different perspectives, in different cultures and for a long period of time.

This chapter will contrast eight different empirical approaches to mental health. Significantly, the empirical underpinnings of all eight models have emerged only in the past 50 years. First, mental health can be conceptualized as Above Normal and a mental state that is objectively desirable—as in Sigmund Freud’s alleged definition of mental health was the capacity to work and to love. Second, mental health can be conceptualized as Positive Psychology—as epitomized by the presence of multiple human strengths. Third, from the viewpoint of healthy adult development, mental health can be conceptualized as Maturity. Fourth, mental health can be conceptualized as Resilience, as the capacity for successful adaptation, “grit” and homeostasis. In such a view, mental health, analogous to a competent immune system, allows the individual to function well despite stressful or dangerous environments. Fifth, mental health can be conceptualized as Emotional Intelligence and wise and successful object relations. Sixth, mental health can be conceptualized as Subjective Well-Being (SWB)—a mental state that is subjectively experienced as happy, contented, and desired. Seventh, mental health can be conceptualized as Positive or “Spiritual” Emotions.

MODEL A: MENTAL HEALTH AS ABOVE NORMAL

This first perspective differs from the traditional medical approach to health and illness. Until recently, being without manifest psychopathology equaled mental health. In this medical model, if one were to put all individuals on a continuum, normality would encompass the major portion of the young adults, and abnormality would be the small remainder. This definition of health correlates with the traditional role model of the doctor who attempts to free his patient from grossly observable signs of illness. In other words, in this context health refers to a reasonable, rather than an optimal, state of functioning.

Yet, as already pointed out, mental health is not normal, it is above average. Indeed, some believe that true mental health is the exception not the rule. Moreover, until recently some believed mental health was imaginary. Many post-war psychiatrists had continued to agree with Sigmund Freud who had dismissed mental health as “an ideal fiction.” In the late 1950s, two of the world’s most distinguished psychiatrists could dismiss the term entirely. Sir Aubrey Lewis wrote in 1958, “Mental health is an invincibly obscure concept,” and in 1957 Fritz Redlich asserted, “We do not possess any general definition of normality and mental health from either a statistical or a clinical viewpoint.”
Certainly, the absence of illness and the presence of health overlap but do not always coincide. In the military, the mental health for a jet pilot must exceed the draft board’s 1-A. In primary school teachers and in Supreme Court justices, it is more than simply freedom from symptoms or for Freud’s capacity to work and to love that are looked for. However, to avoid quibbling over what traits characterize mental health, it is helpful to adopt the analogy of a decathlon champion. What constitutes a “track star”? Is it muscle strength, or speed, or endurance, or grace or competitive grit? Does not the definition differ from nation to nation, and century to century? Not really. The salience of a given facet of track or of mental health may vary from culture to culture, but all are important. A high score on the decathlon has conveyed behavioral skill in track for millennia and in every country of the world—even as the hair splitters argue over the right words with which to describe a track athlete.

Table 3.6–1. Three Contrasting Definitions of Mental Health

<table>
<thead>
<tr>
<th>Model A Mental Health/Normality</th>
<th>Model B Positive Psychology</th>
<th>Model C Maturity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ability to love, work, and play</td>
<td>Love: Intimacy/reciprocal attachment, Kindness/generosity/nurturance, Social intelligence/emotional intelligence</td>
<td></td>
</tr>
<tr>
<td>Possesses empathy adequacy in interpersonal relations</td>
<td>Temperance: Forgiveness/mercy, Modesty/humility, Prudence/caution, Self-control/self-regulation</td>
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<tr>
<td>Efficient in problem solving</td>
<td>Wisdom and Knowledge: Curiosity/interest, Love of learning, Judgment/open-mindedness, Perspective, Creativity/originality/ingenuity</td>
<td></td>
</tr>
<tr>
<td>Invested in life</td>
<td>Transcendence: Awe/wonder, Gratitude, Hope/future mindedness, Spirituality/faith, Playfulness/humor</td>
<td></td>
</tr>
<tr>
<td>Self-actualization, Oriented toward future</td>
<td>Having the capacity for hope: An altruistic concern for other human beings outside one’s own group and beyond one’s own time and place, The capacity to suspend one’s adult identity and engage in childish play at appropriate times</td>
<td></td>
</tr>
<tr>
<td>Autonomy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recognition of needs, In touch with their own identity and feelings</td>
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</table>
As with excellence in the decathlon, no single measure defines mental health, but all measures are highly intercorrelated. Table 3.6–1 illustrates how multifaceted and unique, each model of positive mental health can be and how very different can be the semantics. But the familial resemblance of each definition to each other is unmistakable.

In 1835 Adolphe Quetelet published the first important book on normality ever written. Rather than focus on pathology, he tried “to approach more closely to what is good and beautiful” and his goal was the statistical analysis of healthy humans. He challenged generations of future investigators with his introductory sentence, “Man is born, grows up, and dies, according to certain laws which have never been properly investigated” (p. 5).

Until World War II, however, Quetelet’s challenge to mental health workers went largely unnoticed. When in 1941 John Clausen and his coworkers were commissioned to assess mental health for the draft board, they were embarking on a novel task. As a way of assessing mental health of recruits, they focused on the absence of psychosomatic symptoms. Although limited, their approach was not abandoned until the 1970s, and questions about psychosomatic symptoms still form an important part of the Hopkins SCL-90, and of scales assessing neuroticism.

After World War II influential works on normal adaptive behavior began to be published—Roy Grinker and John Spiegel’s *Men under Stress*, Robert White’s *Lives in Progress*, Leo Sroles’ *Mental Health in the Metropolis* and Alexander and Dorothea Leightons’ *Cove and Woodlot* were four of the more important. Although all four studies concentrated on the adaptation of nonpatient or normal populations, they still put their emphasis on not pathological rather than on above normal mental health.

Then, in 1958, Marie Jahoda’s report to the Joint Commission on Mental Illness and Health led to a psychiatric sea change regarding the existence of mental health. As illustrated in Table 3.6–1, Jahoda suggested that mentally healthy individuals should (1) be in touch with their own identity and their own feelings. (2) They should be oriented toward the future and over time they should remain fruitfully invested in life. (3) Their psyches should be integrated and provide them resistance to stress. (4) They should possess autonomy and recognize what suits their needs. (5) They should perceive reality without distortion and yet possess empathy. (6) They should be masters of their environment—able to work, to love, and to play and to be efficient in problem solving. Instead of emphasizing the absence of negative symptoms, Jahoda underscored a number of positive traits. Nevertheless, although the purpose of Jahoda’s report was to rid the term, mental health, of “vague, elusive and ambiguous connotation,” at the time she published her criteria, there was still no evidence to prove that her plausible definition was more than mere platitudes that reflected her own culture bound values.

Thus, it was with Roy Grinker’s 1962 studies of “homoclites,” that investigators began the empirical study of positive mental health. Grinker’s homoclites were physical education majors selected for normality but studied only briefly. A second more longitudinal study was the elimination process by which out of 130 healthy jet pilots, already selected for mental
health, the 7 original astronauts were selected. The process underscored both the importance and the commonsensical nature of mental health. The final seven astronauts not only enjoyed exemplary work records but also were competent at loving. All came from intact, happy, small town families; they all were married with children. Although venturesome test pilots, they all had had very few accidents during their years of flying or even earlier. They could tolerate both close interdependent association and extreme isolation. They trusted others and were uncomplaining under discomfort. They manifested great capacity for withstanding frustration; nevertheless, emotions both negative and positive were strongly experienced. Not introspective, the astronauts seldom dwelt on their inner emotions; but they were sensitive to their emotions and could describe them when asked. They were aware of the feelings of others, and they avoided interpersonal difficulties. Unlike most people their performance improved under stress (e.g., working at a simulated altitude of 65,000 feet in a poorly functioning pressure suit). Their group neuroticism (Maudsley Personality Inventory) score was the lowest of any group reported in the literature. Although each of the astronauts was very different, they all would have starred in a mental health “decathlon.”

A still more influential study of mental health was the Menninger Psychotherapy Project. In order to cut through the hair splitting of projective tests and the subjectivity of pencil and paper tests Menninger psychologist, Lester Luborsky, devised a behavioral guide (Health-Sickness Rating Scale or HSRS) to assess psychological functioning on a scale of 0 to 100. In 1976 because Luborsky’s scale had been designed to evaluate candidates for psychotherapy rather than for general epidemiological studies, two of the architects of DSM-III developed a revision of the HSRS called the Global Assessment Scale (GAS). Rater reliabilities for both instruments and between the two instruments were about 0.85 to 0.95. In cross-cultural comparison investigators noted that “the usefulness of HSRS as an international thermometer of mental health is strongly supported.” A modified version of the GAS was introduced in DSM-III-R as the Global Assessment of Functioning (GAF).

On Luborsky’s scale a score of 95 to 100 reflected “an ideal state of complete functioning integration, of resiliency in the face of stress, of happiness and social effectiveness.” On the GAF, a score of 95 to 100 equaled “no symptoms, superior functioning in a wide range of activities; life’s problems never seem to get out of hand; patient is sought out by others because of his warmth and integrity.” The words differ, but the melody is the same.

By 1978 The Report to the President by the President’s Commission on Mental Health forcefully reiterated the importance of defining clearly what is meant by mental health. Nevertheless, it was not until 15 years later when evidence emerged to support the validity of Axis V, DSM-IV did psychiatry finally possess a metric for the measurement of “above average” mental health. The World Health Organization Disability Assessment Schedule replaced it in the DSM-5, but the new tool is still a measure of mental illness rather than health: all 36 questions contain the words “difficulty,” “problem,” “drain,” or “health condition.”

In order to identify mental health empirically, behavioral data are needed and a longitudinal biopsychosocial perspective must be maintained. Two very different life histories from
Harvard’s Study of Adult Development illustrate what is meant by “above normal” mental health. One man, “Alfred Paine,” received an “average” score for mental health (GAF = 72); he never sought psychiatric care. In contrast, “Richard Luckey” received an above normal score for mental health (GAF = 95). These two (disguised) case histories help to underscore that objective and subjective mental health are not merely value ridden “ideal fictions.” Both men had been selected at 18 for mental health and were prospectively observed for a lifetime. Confounding variables like gender, education, social class, ethnicity, age, and birth cohort were held constant. Neither man had ever sought psychiatric help, for nor been diagnosed with mental illness; but there is no question who was the healthier.

Alfred Paine was a master of cheerful denial. On questionnaires, he described himself as a social drinker, in quite good physical health and close to his children. It was only by interviewing him personally, talking with his wife, examining his medical record, reading the disappointed questionnaires from his children—and then, finally, by reading his obituary—that Alfred Paine’s misery could be fully appreciated.

The ancestors of Alfred Paine had been successful New England clipper ship captains. All his grandparents had graduated from high school. One grandfather became a merchant banker, and the other the president of a Stock Exchange. Paine’s father had graduated from Harvard, and his mother from a fashionable boarding school. When Alfred Paine was 2 weeks old, his mother died from the complications of childbirth. When he was 2 years old, his father died. Paine was bottle-fed by a variety of surrogates and raised by his grandmother. As a young boy Paine was a head-banger; in adolescence he was a “lone wolf.”

In college Alfred Paine was often in love, but for Paine being in love meant having someone to care for him. His three marriages were all unhappy—in part, because of the alcohol abuse that he maintained that he did not have, and in part because he was frightened of intimacy. At 50 Paine answered “true” to the statements “Sexually most people are animals” and “I would have preferred an asexual marriage.”

At 47 Paine recalled the ages from 1 to 13 as the unhappiest in his life. At age 70 he believed that the ages from 20 to 30 were the unhappiest. But there had never been a time that Paine was happy. Nevertheless, on a pencil and paper test of depression, Paine had achieved one of the best scores in the study. He had never sought psychotherapy; and none of his doctors ever called him mentally ill. His alcohol abuse never led to an arrest or to missed days of work. At 70 Paine wrote that his own physical health was “excellent;” but in fact he was seriously overweight, afflicted by hypertension and gout, and suffered from obstructive pulmonary disease—the result of life-long smoking. By 75, he had lost all his teeth; both his kidneys and his liver were failing; and he was cursed with a mild dementia, the result of a drunken fall.

Although he had made a good living over the years at a job he disliked, by 75 Paine’s trust fund and his pension had been eroded through multiple divorces and self-inflicted tax troubles. His house looked as if furnished from yard sales, and little other than television now absorbed him. On his age 75 questionnaire, Paine refused to answer the part that dealt with life enjoyment. Thus, his subjective lack of joy in life had to be inferred from the fact that over the past 20 years there was no area of his life other than his religious activities in which he had expressed satisfaction. On average he saw his three children once every 2 years and he grumbled that, “They hardly let me see my grandchildren.” Although Paine’s third wife was protective and quite loving towards him, he was
quite disrespectful and uncaring towards her. Asked how he and his wife collaborated, he replied, “We don’t. We lead parallel lives.” Since age 50, he had engaged in no pastimes with friends; and at 73 when asked to describe his oldest friend, he growled, “I don’t have any.” Often in his life Paine had found love, but he could not let it inside.

In contrast, Richard Luckey was a well-loved child who took excellent care of himself. Unlike Alfred Paine, Luckey had come from more modest beginnings. None of his four grandparents had gone beyond grade school. His father graduated from high school and went on to become a successful businessman. After college Luckey became head of two successful businesses (one of which he created)—at the same time. He loved his work.

At 70, when looked at through the eyes of his internist, Richard Luckey’s objective physical health had seemed actually worse than Alfred Paine’s. Luckey had high blood pressure, atrial fibrillation, a cardiac pacemaker, and pancreatitis. He was even more overweight than Paine. But if Luckey was ill, he certainly did not feel sick. Over the next 10 years Paine sickened unto death, and Luckey’s health got steadily better. Thus, by 76 Lucky had completely recovered from his pancreatitis. He still wore a pacemaker; and, his blood pressure remained high, but in his doctor’s words—not just his own—“Mr. Luckey continues to enjoy relatively good health… he continues to be active physically and also mentally.” As Luckey, himself, expressed it, “I have done less chain sawing, but I still split wood.” At age 76 Lucky spent 2 months downhill skiing in Austria.

Another crucial difference was that Luckey had never smoked, and he had used alcohol in moderation. “Almost everything we do,” Luckey explained, “is family oriented. His wife amplified, “We rarely go out, but we will have groups for supper such as the church fellowship group or the basketball team for a weekend of skiing, or a vestry meeting at the house.” Luckey was also commodore of his yacht club, and he had friends with whom he exercised regularly.

Richard Luckey described not only his hobbies, his religion and his income producing work as “very satisfying,” but, more important, he experienced his relationships with his wife and with his children as “very satisfying.” His wife and children’s questionnaires revealed a similar satisfaction with him. Luckey’s daughter had described her parent’s marriage as “better than my friends”; then, for good measure she had added two pluses. Luckey’s wife gave her marriage a “9” out of “9,” and on her questionnaire she wrote the study, “My husband is my best friend; I like looking after him. We have grown closer and fonder every year.” Asked how his marriage had lasted for 40 years, Luckey replied, “I really love Chrissie and she loves me. I really respect her, highly esteem her, and she is a real person.” Luckey was close to his brother with whom he fished regularly in the summer. He stayed in touch with and took great pleasure from his children and his grandchildren. It was so easy for Luckey to take in, to “metabolize,” any love that he was offered.

Asked about his retirement Richard Luckey replied, “I think it is all pretty nice. I don’t have a day when I don’t have something to do that I want to do … creativity is absolutely necessary for someone to be healthy. With painting,” he added dreamily, “you forget everything, and that is why it is so very relaxing.” In church Luckey sang both solo and in the choir. Despite an indifferent college scholastic record, at age 75 Lucky was making a serious effort to master the technology of a research institute of which he had become a trustee.

In other words, health is based on an active, joyous, energetic engagement with the world. Such a naturalistic model of health is congruent with the increasing attention to “flow,” a concept recently elaborated and empirically studied by psychologist, Mihaly
Csikszentmihalyi and his students. “Flow” involves the focused attention and psychic absorption which is characteristic of meditation, but unlike meditation, with “flow” the “clutch” is engaged and skilled behavior takes place. With “flow” the participant feels alive and in the world. In “flow” experience with emotions are not just contained and channeled, they are energized and aligned with consciousness of the task at hand. Action, cognition, and feeling are merged into one. Often, when manifested in intense experiences like advanced tennis, technical rock climbing or violin playing, the “flow” experience has required hours of prior practice until much of the effort involved has become second nature.

Csikszentmihalyi’s concept of “flow” is distinct from Freud’s libido. “Flow” occurs when a task is challenging and requires both skill and concentration, when there are clear goals and immediate involvement, when time seems to stop and one’s sense of self vanishes, and when one finds themselves both deeply involved—and in control. A species does not survive just by reproducing; it also has to produce and face new challenges.

**MODEL B: MENTAL HEALTH AS POSITIVE PSYCHOLOGY**

The fact that psychologists have approached mental health somewhat differently from psychiatry has led to the second model. Psychologists, like physiologists, look at continua (traits) rather than categories; while in medicine you either have an illness or you do not. In psychology interventions to improve adequate intelligence or social skills are common, while in medicine to meddle with adequate thyroid function, a healthy hematocrit or a normal mood is only to cause trouble. In the healthy rested individual virtually all psychopharmacological interventions will, over time, make the brain function worse; in contrast, many psychological interventions (e.g., literacy training, stress management) will make the brain function better. Thus, the medical goal of using medication to remove pathology is different from the psychologists’ goal of fostering joy, enthusiasm, curiosity, and love for others in an educative model. As a result, physicians and psychologists draw attention to quite different—if complimentary—models of mental health.

In the 20th century, medicine became increasingly concerned with concrete pathology, while psychology remained interested in education and in platonic and utopian virtue. The model of Positive Psychology conceives of mental health as “the best possible” and has provided the basis for the positive psychology movement.

The last century witnessed not only psychologist John Dewey’s idealism regarding education but also the work of Carl Jung and William James (physicians by training, but psychologists in spirit) concerning the search for and discovery of deeper meanings in life. In the last 70 years, Abraham Maslow’s concept of self-actualization and his emphasis on humanistic psychology have drawn attention to “full use and exploitation of talents, capacities, potentialities.” But until the 21st century, such humanistic psychology has not undertaken empirical research and has ignored predictive validity and follow-up. Humanistic psychology has emphasized “happiness” and the “self” at the expense of collective well-being and has spawned myriad self-help movements that have benefited clients more through placebo effect than from controlled and replicated therapeutic interventions. As early as 1925 psychiatrist,
Adolf Meyer, was already warning of the need to stop “moralizing” about utopian mental health. Mental health, he suggested should be studied through “conscientious and impartial study” and “constructive experimentation.”

Recently, two popular books by a distinguished psychologist, Martin Seligman, *Learned Optimism* and *Authentic Happiness* have served notice that positive psychology is beginning to follow Adolph Meyer’s rules of conscientious and impartial study and constructive experimentation. Seligman’s concept of “learned optimism” and positive psychology incorporate the empirical advances in cognitive psychology that have taken place over the past three decades. Creating a positive attributional style not only serves as a cognitive behavioral treatment for depression but can lead to positive mental states.

Positive psychology wishes to learn how to build the qualities that help individuals and communities, not just to endure and survive but also to flourish. Formally introduced in the January 2000 issue of *American Psychologist*, positive psychology hopes to render the psychology of strength and well-being amenable to scientific study and intervention. In that issue Martin Seligman and Mihalyi Csikszentmihalyi wrote:

“At the individual level, it is about positive individual traits; the capacity for love and vocation, courage, interpersonal skill, aesthetic sensibility, perseverance, forgiveness, originality, future mindedness, spirituality, high talent, and wisdom … Psychology is not just a branch of medicine concerned with illness or health; it is much larger. It is about work, education, insight, love, growth, and play. And in this quest for what is best, positive psychology does not rely on wishful thinking, faith, self-deception, fads, or hand waving; it tries to adapt what is best in the scientific method to the unique problems that human behavior presents to those who wish to understand it in all its complexity.”

Over the past 40 years cognitive therapists have demonstrated that altered cognition cannot only change behavior, it can also alter brain function. If pessimism is the dominant cognition of the depressed, optimism appears the dominant cognition of the mentally healthy. If learned helplessness leads to depression, learned optimism and self-efficacy lead to mental health.

Even if the depressed often appears to view reality more realistically, such accurate reality testing avails depressed individuals nothing.

In part, the importance of optimism to positive mental health depends upon an attributional cognitive style that asserts the good things that happen to someone will last forever and are pervasive. The bad things that happen to someone are limited and unlikely to happen again. In addition, optimism includes hope, a facet of mental health as old as the Greek myth of Pandora, yet hope is a topic to which psychiatry up to now has given little formal consideration. In contrast, the explanatory style of many chronically depressed individuals is that bad events, for which one may be responsible, will last forever and will generalize, while he or she bears no responsibility for good events which not only occur only by chance but are limited and fleeting. How much better to take responsibility for the good events and conceive of them as lasting and pervasive, while the bad events are bad luck, isolated instances, and unlikely to happen again.
Longitudinal studies reveal that an optimistic attributional style improves physical health and wards off depression rather than merely “prolonging human suffering” as Nietzsche feared. In addition, the so-called illusion of optimism permits one to contemplate and plan for rather than to deny the future. As longitudinal studies have repeatedly shown, future mindedness is a critical ingredient of mental health. In addition, in major depression the hopeful illusion of placebo effect accounts for roughly 50 percent of the variance between the effect size produced by SSRIs and no treatment. Thus, experimentally and longitudinally optimism has been linked to positive mood and good morale, to perseverance and effective problem solving, to longevity and to success in a wide spectrum of activities.

A critical distinction, of course, is the degree to which optimism distorts and to which pessimism accurately perceives reality. The pessimism of psychotic depression, like the psychotic optimism of acute mania, involves reality-defying delusion. But the comforting illusions of the mentally healthy do not interfere with learning that stoves are hot, while the pessimistic perceptions of the dysthymic, while often accurate, can still inhibit future efforts to cook. In the prevention of future mental illness, one of psychiatry’s most powerful tools may be the inculcation in the young of optimism, hope, and future mindedness. But to be effective, the optimistic must pull into consciousness emotional awareness of future pain and discomfort (see *anticipation* in Model D).

Recently, advocates of positive psychology have divided positive mental health into four components: *Talents, Enablers, Strengths,* and *Outcomes.* *Talents* are inborn, genetic, and are not much affected by intervention (e.g., high IQ, or being an easy baby). *Enablers* reflect benign social conditions, interventions, and environmental good luck (e.g., a strong family, a good school system, living in a democratic meritocracy); enablers can be experimentally modified to enhance strengths. *Strengths* (see Table 3.6–1) are character traits like curiosity and openness that reflect facets of mental health that are amenable to change. The 24 *Strengths* are currently essential component of modern positive psychology and can be self-assessed via the Internet. *Outcomes* reflect dependent variables (improved GAF, social relationships, SWB) that can be used to provide evidence for the predictive validity that efforts by clinicians to enhance *Strengths* are not just wishful thinking.

Admittedly, which so-called *strengths* are most associated with mental health is open to debate. Wisdom, kindness, and the capacity to love and be loved are strengths with which few would argue. But should courage be included as a strength; and why were intelligence, perfect musical pitch, and punctuality excluded? The answer is that the 24 strengths listed in Table 3.6–1 may be subjected to a variety of tests. First, they must have been recurrent positive values across cultures and across centuries—why punctuality was excluded. Second, they must be valued in their own right and not just as a means to ends. Third, like intelligence and perfect musical pitch they are not inborn talents.

There are several pitfalls with positive psychology. First, the perspective of mental health as Utopia is one of the bohey men of national health policymakers. They are afraid, without directly expressing it, that this perspective will put a backbreaking burden on health insurance. Thus, there is considerable debate within the mental health professions about
whether helping people achieve greater SWB is a process that any insurance program should reasonably be expected to cover. Helping people achieve their potential for community participation is perhaps a more laudable goal. But that, too, is highly value laden and culture bound. Over time society will have to decide who should pay for positive mental health: the individual, the educational system, third party payers, religious organizations, or a combination of all four.

A second caution to positive psychology is the danger of culturally insensitive prescription of parochial virtues. The dangers of value judgments are enormous. “Virtues,” even Aristotelian virtues, need to be distinguished from health. Keeping wounds clean is healthy, but not a virtue. Body hygiene in public places is a virtue but not necessarily healthy.

A third controversial facet of positive psychology is its emphasis on optimism. Since the late 19th century, many social scientists especially those in Europe have mistrusted optimistic cognition, especially religious optimism, as a maladaptive “American” illusion interfering with accurate perception of reality. Nietzsche, Freud, Marx, and Darwin all perceived optimism as evidence of an ingenuous cultural adolescence, not of mature mental health. Opponents of optimism believed that it was healthier to face the hard facts of life. In addition, for most of the 20th century, investigators like Pavlov and Skinner have viewed the study of cognitions of all kinds, of which optimism is one, as inferior to the study of behavior. Only in the last 20 years has psychiatry begun to see the value of positive psychology.

**MODEL C: MENTAL HEALTH AS MATURITY**

Unlike other organs of the body that are designed to mature in the first two decades and then remain functionally static but gradually less robust until death, the brain is different. The brain can develop new functions until the eighth decade and develop anatomically (more efficiently myelinated) until the sixth. Therefore, just as optimal brain development requires almost a lifetime so does assessment of positive mental health. A 10-year-old’s lungs and kidneys are more likely to reflect optimal function than are those of a 60-year-old, but that is not true of their central nervous systems. To some extent, then, adult mental health reflects a continuing process of maturational unfolding. Statistically, physically healthy 70-year-olds are mentally healthier than they were at thirty; and prospective studies reveal that individuals are less depressed and show greater emotional modulation at age 70 than they did at age 30.

But if prospective studies of adult development reveal that the immature brain functions less well than the mature, does that mean adolescents are mentally healthier than toddlers? And are the middle-aged mentally healthier than adolescents? The answer is both yes and no, but the question illustrates why to understand mental health one must understand what is meant by maturity.

In some respects in 1950 Erik Erikson anticipated Jahoda and Grinker when he provided the first model of adult social development. He viewed each of his well-known 8 “stages” of human development as a “criterion of mental health.” Subsequently, Jane Loevinger provided a model of adult ego development. Lawrence Kohlberg has provided a model of adult moral development and most recently, James Fowler has provided a model of spiritual
development. Implicit in all these models is the assumption that greater maturity reflected greater mental health. Arguably, the best definition of mental health that is available is William Menninger’s definition of maturity depicted in Table 3.6–1. In his model maturity is not only the antonym of narcissism, but it is quite congruent with other models of mental health.

To confirm the hypothesis that maturity and positive mental health are almost synonymous the study of the behavior and feeling states of persons studied over a lifetime becomes necessary. Although such longitudinal studies have come to fruition only recently, all illustrate the association of maturity with increasing mental health. After 50, of course, the association between mental health and maturity is contingent upon a healthy central nervous system. The ravages of brain trauma, major depression, arteriosclerosis, Alzheimer’s, alcoholism, and schizophrenia must all be avoided. But if so with good physical health, intellectual function can remain virtually unimpaired until eighty. Common folklore bemoans that millions of neurons are lost with each decade of adulthood, until the value of selective pruning is recognized. Remember 5-year-olds have twice as many neurons as adults do at 20.

**FIGURE 3.6–1.** A schematic model of the expanding social radius of maturing individuals during adulthood.
The association of mental health to maturity is mediated not only by progressive brain myelinization into the sixth decade but also by the evolution of emotional and social intelligence through experience. Erikson conceptualized that such development produced a “widening social radius.” In such a view, life after age 50 was no longer to be a staircase leading downwards, as in the Pennsylvania Dutch cartoons of lifespan development, but a path leading outwards. In Erikson’s model the adult social radius expanded over time through the mastery of the four tasks of “Identity vs. Identity Diffusion,” “Intimacy vs. Isolation,” “Generativity vs. Stagnation,” and “Integrity vs. Despair.” On the basis of empirical data from Harvard’s Study of Adult Development, Vaillant has added two more tasks—Career Consolidation and Keeper of the Meaning or Guardian—to Erikson’s four (see Fig. 3.6–1). The mastery of such tasks appears relatively independent of education, gender, social class, and probably culture.

In such a model, the social radius of each earlier adult developmental task fits inside the next. First, adolescents must achieve an *Identity* that allows them to become separate from their parents; for mental health and adult development cannot evolve through a false self. The task of *Identity* requires mastering the last task of childhood: sustained separation from social, residential, economic, and ideological dependence upon family of origin. Identity is not just a product of egocentricity, of running away from home, or of marrying to get out of a dysfunctional family. For there is a world of difference between the instrumental act of running away from home and the developmental task of knowing where one’s family values end and one’s own values begin. Such separation derives as much from the identification and internalization of important adolescent friends and nonfamily mentors as it does from simple biologic maturation. For example, accents become relatively fixed by age 16 and reflect those of one’s adolescent peer group rather than the accents of one’s parents.

Then, young adults should develop *Intimacy*, which permits them to become reciprocally, and not selfishly, involved with a partner. But living with just one other person in an interdependent, reciprocal, committed, and contented fashion for years and years may seem neither desirable nor possible to a young adult. Once achieved, however, the capacity for intimacy may seem as effortless and desirable as riding a bicycle. Sometimes the relationship is with a person of the same gender; sometimes it is completely asexual; and sometimes, as in religious orders, the interdependence is with a community. Superficially, mastery of intimacy may take very different guises in different cultures and epochs, but “mating-for-life” and “marriage-type love” are developmental tasks built into the developmental repertoires of many warm-blooded species, including the human species. Nevertheless, recent life time studies of marriage reveal “mating” for life is not always the rule—or even desirable. Personalities often change over a lifetime.

*Career Consolidation* is a task that is usually mastered together with or that follows the mastery of intimacy. Mastery of this task permits adults to find a career as valuable as they once found play. On a desert island one can have a hobby but not a career, for careers involve being of value to other people. There are four crucial developmental criteria that transform a “job” or hobby into a “career”: contentment, compensation, competence, and commitment. Obviously, such a career can be “wife and mother”—or in more recent times “husband and
father.” To the outsider the process of Career Consolidation often appears “selfish,” but without such “selfishness” one becomes “selfless” and has no “self” to give away in the next stage of Generativity. Not only schizophrenics but also individuals with severe personality disorder often manifest a lifelong inability to achieve either intimacy or sustained, gratifying employment. In short, they fail to grow up.

Mastery of the fourth task, Generativity, involves the demonstration of a clear capacity to care for and guide the next generation. Existing research reveals that sometime between age 35 and 55, the need for achievement declines and the need for community and affiliation increases. Depending on the opportunities that the society makes available, generativity can mean serving as a consultant, guide, mentor, or coach to young adults in the larger society. Like leadership, generativity means to be in a caring relationship in which one gives up much of the control that parents retain over young children. Good mentors learn “to hold loosely” and to share responsibility. Generativity reflects the capacity to give the self—finally completed through mastery of the first three tasks of adult development—away. Its mastery is strongly correlated with successful adaptation to old age. This is because in old age there are inevitable losses and these may be overwhelming if one has not continued to grow beyond his or her immediate family.

The penultimate life task is to become a Guardian (in anthropological terms, Keeper of the Meaning). Like grandparenthood this task involves passing on the traditions of the past to the future. Generativity and its virtue, care, require taking care of one person rather than another. While keeper of the meaning and its virtues of wisdom and justice are less selective, for justice, unlike care, means not taking sides. Indeed, mastery of this fifth task is epitomized by the role of the wise judge. The focus of a Guardian is with conservation and preservation of the collective products of mankind—the culture in which one lives and its institutions—rather than with just the development of its children.

Just as “selfless” coaches play a different role from “selfish” athletes; just so the organizers, judges, and guardians of the Olympic Games play a very different role from the Games’ more generative but still parochial coaches. Clearly caretakers and grandparents are not mentally healthier than caregivers and parents. The distinction is only that grandparents are usually better at the tasks of Keepers of the Meaning than are 30-year-olds.

Finally, in old age it is common to feel that some life exists after death and that one is part of something greater than one’s self. Thus, the last life task in Erikson’s words is Integrity, the task of achieving some sense of peace and unity with respect both to one’s own life and to the whole world. Erikson described integrity as “an experience which conveys some world order and spiritual sense. No matter how dearly paid for, it is the acceptance of one’s one and only life cycle as something that had to be and that, by necessity, permitted of no substitutions.” One of the Study subjects, age 88, described Integrity in more mundane terms “I need to go to the Department of Motor Vehicles to discover if the world would be safer if I no longer drove a car.” How different the concerns of the elderly adult are from the adolescent seeking Identity.
Admittedly, healthy adult development does not follow rigid rules. Some individuals, often due to great stress, tackle developmental tasks out of order or all at once. On the one hand, Alexander the Great, General Lafayette, Napoleon Bonaparte, and Joan of Arc were inspirational and generative leaders in their twenties. On the other hand, William Osler, one of the most generative physicians of all time, did not confront the task of Intimacy until he married at age 40—well after he had established his career as a brilliant professor of medicine. Ludwig van Beethoven enjoyed a brilliant committed career, but never enjoyed intimacy.

Finally, it must be kept in mind that mastery of one life task is not necessarily healthier than mastery of another; for adult development is neither a foot race nor a moral imperative. Rather, these six sequential tasks above are offered as a road map to help psychiatrists make sense of where they are and where their patients might be located. One can be a happily married 20-year-old; that is usually healthy. One can be a chronically unemployed single 50-year-old; that is usually unhealthy. Acquiring a social radius that extends beyond oneself by definition allows more flexibility and SWB and thus is always healthier than self-preoccupation.

**MODEL D: MENTAL HEALTH AS RESILIENCE**

In 1856, Claude Bernard, a French physiologist and a founder of experimental medicine, started the current understanding of positive health when he wrote, “We shall never have a science of medicine as long as we separate the explanation of the pathological from the explanation of normal, vital phenomena.” For example, coughing and pus in response to infection seemed pathologic but, in fact, were often healing. In other words, it is not stress that kills people, but healthy mastery of stress that permits people to survive.

In 1925, Adolf Meyer, a founder of modern American psychiatry, introduced the current understanding of mental health when he asserted that there were no mental diseases, there were only characteristic reaction patterns to stress. Meyer’s point was that although adaptive mental “reaction patterns” like denial, phobias, and even projections can appear to reflect illness, they may in fact be “normal, vital phenomena” related to healing. Just as immune mechanisms, clotting mechanisms and callous formation heal by distorting bodily equilibrium; just so equally involuntary coping mechanisms heal by distorting mental processes.

Of course, the symptoms of organic brain damage usually reflect disease and not adaptation. Manic-depressive psychosis is due to genetic defect; the mental devastation produced by alcoholism is due to poisoning; and the negative symptoms of schizophrenia reflect brain defect and not adaptation. Nevertheless, much so-called mental illness is more like the healthy, but red and tender swelling that immobilizes a fracture so that it may heal. Much of what is called mental illness in the current diagnostic nomenclature—the symptoms of many anxiety disorders, some depressions, and most personality disorders—are the outward manifestations of homeostatic struggles to adapt to life. Admittedly, analogous to acne and
autoimmune disease, such reaction patterns often reflect rigid, poorly modulated, and pathologic efforts at adaptation.

To set the stage, there are three broad classes of coping mechanisms that humans use to overcome stressful situations. First, there are the ways in which an individual elicits help from appropriate others: namely consciously seeking social support. Second, there are conscious cognitive strategies that are intentionally used to master stress. Third, there are adaptive involuntary coping mechanisms (often called “defense mechanisms”) that distort the perception of internal and external reality in order to reduce subjective distress, anxiety, and depression.

By 1970, the term, defense mechanisms, like many psychoanalytic metaphors, had been largely discarded by empirical social scientists. Consistency of definition and rater reliability was lacking. But over the last 40 years, the idea of involuntary coping has entered the literature of empirical cognitive psychology under such rubrics as “hardiness,” “grit,” “self-deception,” “emotional coping,” and “illusion.” In recent years experimental strategies for assessing such mechanisms, especially with videotape and the Q-sort, have also improved reliability. Several empirical studies, well reviewed by Skodol and Perry, have clarified the current understanding of healthy and unhealthy involuntary adaptive mechanisms (a.k.a. defenses). Nevertheless, no one has yet developed a method for assessing defenses, which meets conventional standards for psychometric reliability. As a result the axis of adaptive involuntary coping mechanisms has been excluded from DSM-5.

This third class of involuntary adaptive coping mechanisms reduces conflict and cognitive dissonance during sudden changes in internal and external reality. If such changes in reality (e.g., the unanticipated crisis of 9/11) are not “distorted” and “denied,” they can result in temporarily disabling anxiety and/or depression. In summary, such homeostatic mental “defenses” shield people from sudden changes in the four lodestars of conflict: affect, reality, relationships, and conscience (see Fig. 3.6–2).
FIGURE 3.6–2. The four lode stars of human conflict.

First, such involuntary mental mechanisms can restore psychological homeostasis by ignoring or deflecting sudden increases in the lodestar of impulse, affect, and emotion. (The emotions of terror, grief, longing and dependency loom just as important as sources of conflict as do lust, fear, and rage.) Psychoanalysts call this lodestar “id,” fundamentalists call it “sin,” cognitive psychologists call it “hot cognition” and neuroanatomists point to the hypothalamic and limbic regions of brain.

Second, such involuntary mental mechanisms can provide a mental time out to adjust to sudden changes in reality and self-image, which cannot be immediately integrated. Individuals who initially responded to the television images of the sudden destruction of New York’s World Trade Center as if it were a movie provide a vivid example of denial of an external reality that was changing too fast for voluntary adaptation. Sudden good news—the instant transition from student to physician or winning the lottery—can evoke involuntary mental mechanisms as often as can an unexpected accident or diagnosis of leukemia.

Third, involuntary mental mechanisms can mitigate sudden irresolvable conflict with important people, living or dead. People become a lodestar of conflict when one cannot live with them and yet cannot live without them. Death is such an example; another is an
unexpected proposal of marriage. And since people exist within one’s self as well as without, internal representations of important people may continue to haunt someone and to cause conflict for decades after they have ceased to live with them and thus evoke involuntary mental response.

Finally, the fourth source of conflict or anxious depression is social learning or conscience. Psychoanalysts call it “super ego,” anthropologists call it “taboos,” behaviorists call it “conditioning,” and neuroanatomists point to the associative cortex and the amygdala. This lodestar is not just the result of admonitions from one’s parents that are absorbed before age five, but is formed by one’s whole identification, with one’s culture, and sometimes by irreversible learning resulting from overwhelming trauma.

There are many ways that one can ignore or distort one or more of these four lodestars in order to mitigate intrapsychic conflict. These coping mechanisms or “defenses” can abolish impulse (e.g., by reaction formation), or social learning (e.g., by acting out), or other people (e.g., by schizoid fantasy) or reality (e.g., by psychotic denial). They can abolish one’s conscious recognition of the subject (e.g., by projection) or the object of a conflict (e.g., by turning against the self) or awareness of the idea (e.g., by repression), or of the affect associated with the idea (e.g., isolation of affect).

All classes of adaptive involuntary coping mechanisms are effective in “denying” or defusing conflict and in “repressing” or minimizing stress; but they differ greatly in the psychiatric diagnoses assigned to their users and in their consequences for long-term biopsychosocial adaptation. In the most pathological category, are found distortion and denial of external reality. These mechanisms are common in young children, in one’s dreams, and in psychosis. To breach them requires altering the brain by neuroleptics or waking the dreamer.

More common to everyday life are the relatively maladaptive, “narcissistic” or “immature” defenses. They include projection, passive aggression, schizoid fantasy, hypochondriasis, dissociation, and “acting out.” Defenses in these categories are common in adolescents, in immature adults, and in individuals with personality disorders. They often make others more uncomfortable than the user. Such defenses are consistently and negatively correlated with global assessment of mental health, and they profoundly distort the affective component of interpersonal relationships.

Less maladaptive mechanisms include repression, intellectualization, reaction formation (i.e., turning the other cheek), and displacement (i.e., directing affect at a more neutral object). They are often associated with anxiety disorders and with the psychopathology of everyday life. In contrast to the “immature” defenses, these intermediate defenses are manifested clinically by phobias, compulsions, obsessions, somatizations, and amnesias. Such users often seek psychological help and such “compromise formations” respond more readily to interpretation. Such defenses usually cause more conscious suffering to the user than to other people. They are common to everyone from 5 years old until death. They are neither healthy nor unhealthy.
The “mature” still distort and alter feelings, conscience, relationships, and reality; but they achieve these alterations gracefully and flexibly. These mechanisms allow the individual consciously to experience the affective component of interpersonal relationships, but in a tempered fashion. Thus, the beholder regards the involuntary mature defenses as virtues, just as the beholder may regard the prejudice of projection and the tantrums of acting out as sins.

Doing as one would be done by (altruism), keeping a stiff upper lip or deploying Grit (suppression), keeping future pain in awareness (anticipation), the ability not to take one’s self too seriously (humor), and turning lemons into lemonade (sublimation) are the very stuff from which positive mental health is made. Unfortunately, like tightrope walking, without months of practice mature mechanisms cannot easily be deployed voluntarily and only then by those with innate balance.

Identification of defenses is difficult. Rarely can people identify their own defenses, and people often fail to recognize them in others or, still worse, “project” their own defenses onto them. To identify a defense an objective observer needs to triangulate past truth with present behavior and subjective report. For example, one woman wins community praise for founding a shelter for battered women (altruism), but she dismisses her behavior as “a need to rent my house.” Another woman is imprisoned for breaking her toddler daughter’s arm in a tantrum (acting out), but she dismisses her behavior as an accident. In fact, social agency records from 30 years before reveal that both women had been taken at age two from the care of physically abusive, alcoholic mothers. Whether one ultimately views another’s coping response as healthy or psychopathic depends on the results of their involuntary efforts. Ultimately, like other facets of mental health, the reliable identification of healthy but involuntary coping mechanisms requires longitudinal study.

**Healthy Involuntary Mental Mechanisms**

Longitudinal studies from both Berkeley’s Institute of Human Development and Harvard’s Study of Adult Development have illustrated the importance of the mature defenses to mental health.

**Humor.** Everyone recognizes that humor makes life easier. As Freud suggested, “Humor can be regarded as the highest of these defensive processes,” for humor “scorns to withdraw the ideational content bearing the distressing affect from conscious attention, as repression does, and thus surmounts the automatism of defense.” With humor, one sees all, one feels much, but one does not act. Humor permits the discharge of emotion without individual discomfort and without unpleasant effects upon others. Mature humor allows one to look directly at what is painful, whereas dissociation and slapstick distracts them to look somewhere else. Yet, like the other mature defenses, humor requires the same delicacy as building a house of cards—timing is everything.

**Altruism.** When used to master conflict, altruism involves getting pleasure from giving to others what that person themselves would have liked to receive. For example, using reaction formation, a former alcohol abuser works to ban the sale of alcohol in his town and annoys his social drinking friends. Using altruism, the same former alcoholic serves as an Alcoholics...
Anonymous sponsor to a new member—achieving a transformative process that may be lifesaving to both giver and receiver. Obviously, many acts of altruism involve free will, but others involuntarily soothe unmet needs.

**Sublimation.** The sign of a successful sublimation is neither careful cost accounting nor shrewd compromise, but rather psychic alchemy. By analogy, sublimation permits the oyster to transform an irritating grain of sand into a pearl. In writing his Ninth Symphony the deaf, angry and lonely Beethoven transformed his pain into triumph by putting Schiller’s “Ode to Joy” to music. But like humor, sublimation does not usually occur on purpose.

**Suppression.** Suppression is a defense that modulates emotional conflict or internal/external stressors through stoicism. Suppression minimizes and postpones but does not ignore gratification. Empirically, this is the defense most highly associated with other facets of mental health. Used effectively, suppression is analogous to a well-trimmed sail; every restriction is precisely calculated to exploit, not hide, the winds of passion. Evidence that suppression is not simply a conscious “cognitive strategy” is provided by the fact that jails would empty if delinquents could learn to just say “No.” Over the last decade Angela Duckworth has carried out cutting edge empirical research on Suppression relabeled as “Grit.”

**Anticipation.** If suppression reflects the capacity to keep current impulse in mind and control it, anticipation is the capacity to keep affective response to an unbearable future event in mind in manageable doses. The defense of anticipation reflects the capacity to perceive future danger affectively as well as cognitively and by this means to master conflict in small steps. Examples would be the fact that moderate amounts of anxiety before surgery promotes post-surgical adaptation and that anticipatory mourning facilitates the adaptation of parents of children with leukemia.

As with the use of altruism and suppression the use of anticipation can often be voluntary and independent of conflict. But it is in cases of “hot cognition” that these defenses can become involuntary and lifesaving.

Just as psychiatry needs to understand how a GAF of 75 might become 90; just so psychiatry needs to understand how best to facilitate the transmutation of less adaptive defenses into more adaptive defenses. One suggestion has been first to increase social supports and interpersonal safety and second to facilitate the intactness of the central nervous system (e.g., rest, nutrition, and sobriety). The newer forms of integrative psychotherapies using videotape can also catalyze such change by allowing patients to see their involuntary coping style.

**MODEL E: MENTAL HEALTH AS SOCIOEMOTIONAL INTELLIGENCE**

High socioemotional intelligence reflects above average mental health in the same way that a high IQ reflects above average intellectual aptitude. Such emotional intelligence lies at the heart of positive mental health. In the *Nicomachean Ethics* Aristotle defined socioemotional intelligence as follows: “Anyone can become angry—that is easy. But to be angry with the
right person, to the right degree, at the right time, for the right purpose, and in the right way—that is not easy.” Nevertheless, as recently as 40 years ago a textbook on intelligence dismissed the concept of such Aristotelian social intelligence as “useless.”

All emotions exist to assist basic survival. While the exact number of primary emotions is arguable, seven emotions are currently distinguished by characteristic facial expressions connoting anger, fear, excitement, interest, surprise, disgust and sadness. The capacity to identify these different emotions in one’s self and in others plays an important role in mental health. The benefits of being able to read feelings from nonverbal cues have been demonstrated in almost a score of countries. These benefits included being better emotionally adjusted, more popular and more responsive to others. Empathic children, without being more intelligent, do better in school and are more popular than their peers. Head Start found that early school success was achieved not by intelligence but by knowing what kind of behavior is expected, how to rein in the impulse to misbehave, being able to wait, and how to get on with other children. At the same time the child must be able to communicate their own needs and turn to teachers for help.

Ethologically emotions are critical to mammalian communication. Since such communications are not always consciously recognized, the more skilled one is in identifying his or her own emotions, the more skilled he or she will be in communicating with others and in empathically recognizing their emotions. Put differently, the more one is skilled in empathy, the more he or she will be valued by others and so the greater will be his or her social supports, self-esteem and intimate relationships.

Social and emotional intelligence can be defined by the following criteria:

► Accurate conscious perception and monitoring of one’s own emotions.
► Modification of one’s emotions so that their expression is appropriate. This involves capacity to self-soothe one’s own anxiety and to shake off hopelessness and gloom.
► Accurate recognition of and response to emotions in others.
► Skill in negotiating close relationships with others.
► Capacity for focusing emotions (motivation) toward a desired goal. This involves delayed gratification and adaptively displacing and channeling impulse.

Some behavioral scientists divide emotions up into positive and negative as if negative emotions were unhealthy. This is probably an error. As with pus, fever and cough, so the negative emotions of sadness, fear and anger are also important to healthy self-preservation. Positive emotions like joy, love, hope, gratitude, and compassion are associated with subjective contentment. While negative emotions interfere with contentment, their expression can be equally healthy.

Over the last 15 years, three important empirical steps have been taken in the current understanding of the relationship of socioemotional intelligence to positive mental health. The first step is that both the functional MRI (fMRI) and ingenious neurophysiological experimentation have led to advances in the current understanding of the integration of prefrontal cortex with the limbic system, especially with the amygdala and its connections. These research advances have brought psychiatrists closer to understanding emotions as
neurophysiological phenomena rather than as platonic abstractions. It has learned that the prefrontal cortex is the region of the brain responsible for working memory, and that the frontal lobes through their connections to the amygdala, hippocampus, and insula encode emotional learning in a manner quite distinct from both conventional conditioning and declarative memory.

The second step forward has been the slow but steady progress in the conceptualizing and even the measuring of “emotional intelligence.” Over the last decade measures of emotional intelligence are evolving rapidly.

The third advance is the use of videotape to chart emotional interaction. Videos of sustained family interactions reveal that the most important aspect of healthy infant development, of adolescent development, and of marital harmony is how partners or parents respond to emotion in others. To ignore, to punish, and to be intimidated or contemptuous of how another feels spells disaster. Children of emotionally attuned parents are better at handling their own emotions, and are more effective at soothing themselves when upset. Such children even manifest lower levels of stress hormones and other physiological indicators of emotional arousal.

Where the passive study of positive mental health ends and active primary prevention begins is unclear but, like the model of positive psychology, the model of socioemotional intelligence is potentially interventionist. Just as someone can have above average musical skill or physical coordination and yet can train these strengths to be even higher; just so someone can learn to enhance emotional modulation. Until late in the Cold War, empirically researched techniques for “getting to yes” in negotiations were not in any academic curricula.

There are now many exercises in handling relationships that help couples, business executives and diplomats become more skilled at conflict resolution and negotiation. In the past decade, there has also been an increasing effort to teach schoolchildren core emotional and social competencies, sometimes called “emotional literacy.” The relevance of these advances in psychology to psychiatry include teaching emotion recognition and differentiation in the eating disorders, and teaching anger modulation and finding creative solutions to social predicaments for behavior disorders.

**MODEL F: MENTAL HEALTH AS SUBJECTIVE WELL-BEING**

In this chapter, happiness will be construed to refer to SWB a relatively neutral and, more important, a long-lasting state of affairs. The term “happiness,” however, has multiple meanings. For example, happiness can also be construed to mean nothing more than selfish pleasure. This interpretation has given Positive Psychology the disparaging reputation of “happiology.” To underscore this aspect, the author prefers to define “happiness” as selfish *drive reduction* and “joy” to refer to the equally satisfying, less autistic, and longer lasting *interpersonal connection*. The search for happiness can appear selfish, narcissistic, superficial, and banal. Happiness is often based on illusion or on dissociative states. Pleasures can come easily and be soon gone. Illusory happiness is seen in the character structure associated with bipolar and dissociative disorders, with the maladaptive denial of Pollyanna
and Voltaire’s Dr. Pangloss and with exaltation of “me” advocated by much pop psychology. Examples of maladaptive “happiness” can be the excitement of risk taking, from being “high” on drugs, and from “turning-on” to any unmodulated but gratifying primitive need like binge eating, tantrums, promiscuity, and revenge. Such maladaptive happiness can bring temporary bliss but has no sticking power. It is because of such ambiguity of meaning that, throughout this section, the term SWB will be substituted for happiness.

National well-being has been used more appropriately than “national happiness” by political scientists describes the “health” of nations. The demographic variables assessed include women’s rights, lack of corruption, percent live births, and freedom of the press.

The importance of the term SWB addresses the question is it better to meet some expert’s definition of mental health or is it better to feel subjectively fulfilled? The answer is “both.” For positive mental health does not just involve being a joy to others; one must also experience SWB. Long before humankind considered definitions of mental health, they pondered criteria for subjective happiness. For example, objective social support accomplishes little if subjectively the individual cannot feel loved. Thus, capacity for SWB becomes an important model of mental health. Put differently happiness and SWB are always congruent if they involve positive emotions. Negative emotions like Greed, Lust, Hate, and Vengeance are all about me and lead only to fleeting satisfactions. The eight great positive emotions: Gratitude, Love, Joy, Compassion, Forgiveness, Trust (Faith), Hope, and Awe are all about the other and can lead to lasting well-being.

SWB is never categorical. Healthy blood pressure is the objective absence of hypotension and hypertension, but SWB is less neutral. SWB is not just the absence of misery but the presence of positive contentment. Nevertheless, if SWB is an inescapable dimension of mental health, it is often regarded with ambivalence or ignored altogether. If through the centuries philosophers have sometimes regarded “happiness” as the highest good, psychologists and psychiatrists have tended to be as oblivious to SWB as they are to mental health. An electronic search of psychological abstracts since 1987 turned up 57,800 articles on anxiety, 70,856 on depression, but only 5,701 mentioned life satisfaction and only 851 mentioned joy.

On the one hand, “no man is happy who does not think himself so”; but this will be true only if the “Happiness” comes from unselfish positive emotions or “selfish” behaviors that also gratify others: e.g., self-efficacy, play, and “flow” (deep but effortless involvement). Spirituality (e.g., prayer, meditation, and belief in a power greater than the self) all rid the individual of narcissistic focus on shame, resentments, and the “poor-me’s.” Fostering the 24 Strengths in Table 3.6–1, model B is perhaps the most important prescription for SWB from Positive Psychology.

The mental health issues involved in SWB are complicated and clouded by historical relativism, value judgment, and illusion. Europeans have always been skeptical of American concern with happiness. Only in the last decade have investigators like Barbara Fredrickson, Martin Seligman, and David Snowdon pointed out that a primary function of positive emotional states and optimism is that they facilitate self-care. SWB makes available personal
resources that can be directed towards innovation and creativity in thought and action. Thus, SWB, like optimism, becomes an antidote to learned helplessness. Again, controlling for income, education, weight, smoking, drinking, and disease, happy people are only half as likely to die at an early age or become disabled as unhappy people.

A distinction can be made between pleasure and gratification. Pleasure is in the moment, is closely allied with happiness and involves satisfaction of impulse and of biological needs. Pleasure is highly susceptible to habituation and satiety. In contrast, gratification can be equated with what Aristotle called eudaimonia and Czikszentmihalyi terms “flow.” In such a distinction if pleasure involves satisfaction of the senses and emotions, gratification involves joy, the satisfaction of “being the best you can be” and of meeting aesthetic and spiritual needs. This can be manifested by a child lost in play, a mountaineer transported by rock climbing, or a father marveling at his daughter’s first solo on a bicycle.

But once again the role of value judgment clouds the view of whether any given form of happiness is good or bad. Is the happiness of helping others better than the happiness of gratifying creative play? The jury is still out. In addition, all emotions exist to promote survival as well as to communicate with others. Subjective (unhappy) distress can be healthy. As ethologically minded investigators have long pointed out, subjective negative affects (e.g., fear, anger, and sadness) can be healthy reminders to seek environmental safety and not to wallow in SWB. If positive emotions facilitate faith, hope, optimism, and contentment, fear is the first protection against external threat; sadness protests against loss and summons replacement, and anger signals trespass.

Positive emotion generates exploration and promotes mastery. Unlike negative emotions, which generate zero–sum, win–lose situations, positive emotions generate win–win situations. However, tolerance of negative emotions may characterize some periods of the lifecycle more than others. The relative absence of depression and anxiety over time is healthy in grammar school children from 8 to 10 and in young submariners in their twenties. But increasing capacity to tolerate and bear subjective depression and anxiety distinguishes healthy adolescents from healthy fifth graders, and healthy (generative) submarine skippers from healthy enlisted men. There is a time to hope and a time to fear. Human development is complex.

Until recently the scientific parameters of SWB were as vague as those for objective mental health. A 1967 definition suggested that a happy person is “young, healthy, well-educated, well paid, extroverted, optimistic, worry free, religious and married with high self-esteem, a good job, morals, and modest aspirations.” In the last 30 years, however, research has shown that such a vacuous generalization only partly correct and that the italicized adjectives are untrue or true only with qualifications.

The Nun Study by Snowdon and Danner provides perhaps the most convincing link between subjective happiness and physical health. In their twenties, 180 nuns were asked to write a two to three page autobiography. Of those who expressed the most positive emotion only 24
percent had died by 80. In contrast, by age eighty 54 percent of those who expressed the least positive emotion had died.

Only in the last three decades have investigators, especially Edward Diener, made a serious effort to attend to definitional and causal parameters of SWB and thereby address important questions. One such question is: Is SWB more a function of environmental good fortune, or is it more a function of an inborn, genetically based temperament? Put differently, does SWB reflect trait or state? If SWB reflects a safe environment and the absence of stress, it should fluctuate over time, and those individuals who are happy in one domain or time in their lives might not be happy in another.

A second question but one related to the first is what is cause and what is effect. Are happy people more likely to achieve enjoyable jobs and good marriages or does conjugal stability and career contentment lead to SWB? Or are such positive associations the result of still a third factor? For example, the absence of a genetic tendency for alcoholism, for major depression, for trait neuroticism, and even for the presence of a chronic wish to give socially desirable answers (impression management) might conflate both SWB and reports of good marriage, and career contentment.

Research over the last three decades has provided a tentative answer to the first question. Modern research has confirmed the aphorism of Duke La Roche-Foucauld, “Happiness and misery depend as much on temperament as on fortune.” SWB is highly heritable, and relatively independent of demographic variables. SWB is due more to “top-down” processes—temperamental factors governing SWB—rather than due to “bottom-up factors”—for example, high income leading to SWB.

As with physiological homeostasis, evolution has prepared to make subjective adjustments to environmental conditions. Thus, one can adapt to good and bad events so that he or she does not remain in a state of either elation or despair. But they have a harder time adjusting to their genes. Studies of adopted away twins have demonstrated that half the variance in SWB is due to heritability. The SWB of monozygous twins raised apart is more similar than the SWB of heterozygous twins raised together. Among the heritable factors making a significant contribution to high SWB are: low trait neuroticism, high trait extraversion, absence of alcoholism, and absence of major depression. In contrast to tested intelligence when heritable variables are controlled, SWB is not affected by environmental factors like income, parental social class, age, and education.

For example, investigators have been startled that a significant number of AIDS victims perceive that their illness has enhanced the quality of their subjective lives. Paraplegic victims of spinal injuries adapt so that within 2 months after injury their SWB returns to a state where positive emotion exceeds negative emotion. Similarly, after a few weeks of temporary elation lottery winners also return to baseline. Some of the homeostatic mental mechanisms underlying such adaptation were elaborated in a prior section.

If SWB were due largely to the meeting of basic needs, then there should be a relatively low correlation between SWB in work and SWB in recreational settings or between SWB in
social versus SWB in solitary settings. However, in most studies the correlations between SWB in different facets of life are very high—higher than the correlation between height and weight. People who are satisfied with their lives at one point in time are more likely to be satisfied with their jobs in the future and people with high job satisfaction are more likely to report satisfaction with retirement. Admittedly, a few studies exist where correlations are low between satisfaction with different facets of life. Again, more work is needed.

Since women experience more objective clinical depression than men do, the fact that gender is not a determining factor in SWB is interesting. One explanation is that women appear to report both positive and negative affects more vividly than men. In one such study gender accounted for only 1 percent of the variance in happiness but 13 percent of the variance of the intensity of reported emotional experiences.

Consistently, relationships are more important to SWB than money. In a representative study of 800 college alumni, respondents who preferred high income, occupational success, and prestige to having very close friends and a close marriage were twice as likely to describe themselves as “fairly” or “very” unhappy. Over the last two decades the doubling of net disposable income (controlling for inflation) in the Western world (FIGURE 3.6–3) did not effect SWB. Additional evidence that environmental events are much less important to SWB than might be expected comes from cross-cultural studies. Mean life satisfaction in socioeconomically challenged Brazil and China is higher than in socioeconomically blessed Japan and Germany.

In some instances environment can be important to SWB. Young widows remain subjectively depressed for years. Even though their poverty has been endured for centuries, respondents in very poor nations, like India and Nigeria, report lower SWB than do other more prosperous nations. The loss of a child never stops aching. Although achieving concrete goals, like money and fame do not lead to a sustained increase in SWB, social comparison, like watching one’s next door neighbor become richer than you, does exert a negative effect on SWB.

Maintaining self-efficacy, agency, and autonomy make additional environmental contributions to SWB. For example, surprisingly, elders will use discretionary income to live independently even though this means living alone rather than with relatives. SWB is usually higher in democracies than in dictatorships. Assuming responsibility for favorable or unfavorable outcomes (internalization) is another major factor leading to SWB. Placing the blame elsewhere (externalization) significantly reduces SWB. In other words, the mental mechanisms of paranoia and projection make people feel worse rather than better.

Over the past 30 years, methodological solutions have accelerated understanding of SWB just as they have accelerated understanding of objective mental health. Longitudinal studies, multivariate analysis, and causal modeling have each done much to free investigators from correlational reasoning. Nevertheless, efforts to measure SWB have been quite varied and lack a gold standard. Some investigators measure SWB as simply global life-satisfaction; other investigators assess more specific domains like work, marital satisfaction, and positive
affect. However, the question “How do you feel about your life as a whole?” answered on a simple 7 point scale ranging from “delighted” to “terrible” works surprisingly well.

More refined methods of measurement of subjective states of mind have included the PANAS (The Positive and Negative Affect Scale), which assesses both positive and negative affect each with ten affect items. The Satisfaction with Life Scale represents the most recent evolution of a general life satisfaction scale. Most recently the widely validated SF-36 has allowed clinicians to assess the subjective cost–benefits of clinical interventions. Because short-lived environmental variables can distort SWB, consensus is emerging that naturalistic experience-sampling methods are the most valid way to assess SWB. With such sampling methods, research subjects are contacted by beeper at random times during the day for days or weeks and at each interval are asked to assess their SWB. This method provides a more stable report of SWB. Finally, in order to tease verbal self-report from actual subjective experience, physiological measures of stress (e.g., measures of galvanic skin response, salivary cortisol, and filming facial expression by concealed cameras) have also proven useful.

![Figure 3.6-3](image.png)

**FIGURE 3.6–3.** The independence of a 240 per cent increase in US individual income (adjusted for inflation) from subjective well-being over 40 years.

In the 21st century, investigators like Fredrickson, Vaillant, and Damasio have found instruments like the PANAS too cognitive and replaced “positive affects” like Joviality, Self-Assurance, Attentiveness, and Serenity with more limbic affects like Joy, Love, Compassion, Trust, and Gratitude. However, these latter more significant positive affects (described in the next model) do not lend themselves to rating scales.
MODEL G: MENTAL HEALTH AS POSITIVE OR “SPIRITUAL” EMOTIONS

In the 19th century, psychiatrists wrote about concepts like “moral insanity” and “good character,” and mental health was deemed related to morality and religious observance. During the 20th century, the rise of cultural anthropology, psychoanalysis, behaviorism, molecular biology, and secularism in general all led psychiatrists to doubt there was any relationship between morality and health. Recently, with advances in neuroscience that viewpoint has begun to change.

Model G as a reflection of positive (“spiritual”) emotions, however, was not included in the 8th edition of this textbook because the science was not yet in place to support its inclusion. Recent advances in neuroscience and in the biological understanding of positive emotion have necessitated psychiatry taking “positive psychology” seriously (see Peterson and Park, Chapter 44). In the last 10 years, however, positive emotions, previously relegated to popular songs, pastoral counseling, and humanistic psychology, have been rendered scientifically tangible.

Fifty years ago medical students were taught mainly about hypothalamic emotions like lust, hunger, fear, and rage. Such emotions are common also to lunatics, alligators, and decorticate cats. Prosocial emotions like empathy, compassion, and parental love were thought to be learned behaviors and, therefore, placed in the neocortex, and in curricula of schools of education.

In the 1960s, Paul MacLean with his focus on the limbic system unique to mammals and Harry Harlow and John Bowlby, shifting attention to love as attachment rather than as Eros and lust, created the basis for neuroscience to provide substance to the platitudes of Jahoda, Abraham Maslow, and even of St. Paul with his “theological virtues” of faith hope and love.

Positive emotions arise from the inborn prosocial mammalian capacity for unselfish parental love. Thus, they are grounded in evolutionary heritage. Research over the last 20 years has placed these emotions firmly in the limbic system. Remove a mother hamster’s cortex and she cannot do mazes but remains a competent mother. Damage her limbic system, however, and she can still do mazes but not parent her pups.

Model G defines both mental and spiritual health as the amalgam of the positive emotions that bind to other human beings. Love, hope, joy, forgiveness, compassion, faith, awe, and gratitude comprise the important positive and “moral” emotions included in this model. Of great importance, the eight selected positive emotions all involve human connection. None of the eight emotions listed is just about the self. These positive emotions appear to be a common denominator of all major faiths. Omitted from the list are five other positive emotions—excitement, interest, contentment (happiness), humor, and a sense of mastery, for a person can feel these latter five emotions alone on a desert island.

Negative emotions originating in the hypothalamus such as fear and anger are elaborated in the human amygdala (larger in humans than in other mammals). Of tremendous importance
to individual survival, the negative emotions are all about “me.” In contrast, positive emotions, apparently generated in the limbic system and unique to mammals, have the potential to free the self from the self. People feel both the emotions of vengeance and of forgiveness deeply, but the long-term results of these two emotions are very different. Negative emotions are crucial for survival in time present. The positive emotions are more expansive and help to broaden and build. In time future, they widen one’s tolerance for strangers, expand one’s moral compass, and enhance one’s creativity. Careful experiments by neuroscientists like Jaak Panskepp and Richard Davidson and psychologists like Barbara Fredrickson and Sonia Lyubomirsky document that while negative emotions narrow attention and miss the forest for the trees, positive emotions, especially joy, make thought patterns more flexible, creative, integrative, and efficient.

The effect of positive emotion on the autonomic (visceral) nervous system has much in common with the relaxation response to meditation. In contrast to the metabolic and cardiac arousal that the fight-or-flight response of negative emotion induces in sympathetic autonomic nervous system, positive emotion via parasympathetic nervous system reduces basal metabolism, blood pressure, heart rate, respiratory rate, and muscle tension. fMRI studies of Kundalini yoga demonstrate that meditation increases activity of the hippocampus and the right lateral amygdala, which in turn leads to parasympathetic stimulation, and the sensation of deep peacefulness.

Positive emotions have a biological basis, which means that they have evolved through natural selection. The prosocial emotions probably reflect adaptations, which permitted survival of relatively defenseless Homo sapiens and their extremely defenseless children in the Africa savannah 1 to 2 million years ago.

Evidence for Positive Emotions

However, it has taken recent developments in neuroscience and ethology to make positive emotions a fit subject for scientific study. For example, infantile autism, a not uncommon genetic disorder of emotional attachment, was not discovered until 1943 by a Johns Hopkins child psychiatrist, Leo Kanner—in his own son. Until then it was not possible for medicine to articulate a positive emotion as basic, but as cognitively subtle, as attachment. Today, the congenital lack of empathy and difficulties of attachment in childhood autism can be recognized by any competent pediatrician.

It was in the years 1945–1950 that psychoanalyst John Bowlby’s ethological studies first convinced physicians that orphans needed affection as much as food. It was in the 1950s that Harry Harlow’s objective findings of attachment behavior in rhesus monkeys rendered nonsexual love a tangible biologic reality for psychologists. Two decades later Paul Ekman, doubting Margaret Mead’s assertion that emotions and their facial expression were culturally based, traveled as far afield as the New Guinea highlands to demonstrate that social emotions were biological and not cultural in origin.

To locate positive emotion in the mammalian limbic system has been a slow arduous process. In 1955, James Olds, an innovative neuropsychologist, observed that 35 out of 41 electrode
placements within the limbic system of rats, but only 2 out of 35 placements outside of the
limbic system, proved sufficiently rewarding to lead to self-stimulation. In the 1950s, also,
neurobiologist Paul MacLean pointed out that the limbic structures govern mammalian
capacity to remember (cognition) but also to play (joy), to cry out at separation (faith/trust)
and to take care of own (love). Except for rudimentary memory, reptiles express none of
these qualities.

Not until the last 20 years, however, have fMRI studies demonstrated that when individuals
subjectively experience existential states of fear, sadness, or pleasure, blood flow increases in
limbic areas and decreases in many higher brain areas. Various studies have located human
pleasurable experiences (tasting chocolate, winning money, admiring pretty faces, enjoying
music, and orgasmic ecstasy) in limbic areas—especially in the orbitofrontal region, anterior
cingulate, and insula. These diverse structures are closely integrated and organized to help to
seek and to recognize all that falls under the rubric of mammalian love and human
spirituality. Only in the last 20 years have neuroscientists like John Allman and Giacomo
Rizzolatti identified the limbic spindle (Von Economo) cells and mirror cells that undergird
prosocial human mentation.

The anterior cingulate gyrus links valence and memory to create attachment. Along with the
hippocampus, the anterior cingulate is the brain region most responsible for making the past
meaningful. In terms of mediating attachment, the anterior cingulate receives one of the
richest dopaminergic innervations of any cortical area. Thus, the cingulate gyrus provides
motivational salience not only for lovers but also for drug addicts. The anterior cingulate is
crucial in directing whom one should approach and whom one should avoid. Maternal touch,
body warmth, and odor via the limbic system and especially via the anterior cingulate,
regulate a rat pup’s behavior, neurochemistry, endocrine release, and circadian rhythm. Brain
imaging studies reveal that the anterior cingulate gyrus is aroused neither by facial
recognition of friends per se nor by sexual arousal per se. Rather, anterior cingulate fMRI
images lights up when a lover gazes at a picture of a partner’s face or when a new mother
hears her own infant’s cry.

Perhaps no area of the brain is more ambiguous in its evolutionary heritage or more crucial to
mental health than prefrontal cortex. The prefrontal cortex is in charge of estimating rewards
and punishments and plays a critical role in adapting and regulating emotional response to
new situations. Thus, the prefrontal lobes are deeply involved in emotional, “moral,” and
“spiritual” lives.

From an evolutionary standpoint, the human frontal lobes are not different from chimpanzees
in terms of number of neurons. Rather, it is the frontal lobe white matter (the connectivity
between neurons through myelinated fibers), which accounts for larger frontal lobes of
humans. This connectivity to the limbic system underscores its “executive” function that
includes the ability to delay gratification, comprehend symbolic language, and, most
important, to establish temporal sequencing. By being able to connect memory of the past to
“memory of the future,” the frontal lobes establish for Homo sapiens predictable cause and
effect.
Surgical or traumatic ablation of the ventromedial prefrontal cortex can turn a conscientious responsible adult into a moral imbecile without any other evidence of intellectual impairment. Destroy the medial prefrontal lobes of the neocortex as was done by the tamping rod that penetrated the skull of the legendary 19th century railroad worker, Phineas Gage; and one destroys the capacity for obedience to social mores. Phineas Gage had been a responsible foreman until an explosion drove the tamping rod that he was using to place a dynamite charge through the orbit of his left eye and out through the top of his skull. Although he survived, his medial frontal lobes were destroyed, as was his capacity for socially appropriate and empathic behavior. His intellect remained intact, but lacking empathy he was no longer mentally healthy.

The insula is another part of the limbic system that is only beginning to be understood. The insula is a medial cortical gyrus located between the amygdala and the frontal lobe. The brain has no sensation; humans feel emotion only in their bodies. The insula helps to bring these visceral feelings into consciousness: the pain in one’s heart of grief, the warmth in one’s heart of love, and the tightness in one’s gut from fear all make their way into consciousness through the insula.

Both the limbic anterior cingulate and insula appear active in the positive emotions of humor, trust, and empathy. The higher apes are set apart from other mammals by a unique neural component called the spindle cell. Humans have twenty times more spindle cells than either chimps or gorillas. (Adult chimpanzees average about 7,000 spindle cells. Human newborns have four times more; and human adults have almost 200,000 spindle cells.) Monkeys and other mammals with the possible exception of whales and elephants are totally lacking in these special cells. These large, cigar-shaped spindle or “Von Economo” neurons appear central to the governance of social emotions and moral judgment. Spindle cells may have helped the great apes and humans integrate their mammalian limbic system with their expanding neocortex. Spindle cells are concentrated in the anterior cingulate cortex, the prefrontal cortex, and the insula. More recently, scientists have discovered a special group of “mirror neurons” that reside in the insula and anterior cingulate. These neurons are more highly developed in humans than in primates and appear to mediate empathy—the experience of “feeling” the emotions of another.

While the practical applications of this newest model of mental health are still many years away, these findings provide further evidence that the brain and mind are one. In several studies, the prosocial biological activity of the anterior cingulate cortex and insula was highest in individuals with the highest levels of social awareness (based on objectively scored tests). In other words, there are not only biologic individual differences for negative mental health but also for positive mental health.

**FUTURE DIRECTIONS**

In the 19th century, mental health was deemed related to morality and the psychiatrists wrote of “moral insanity” and “good character.” But in the latter half of the 20th century, with a
19th century boost from Sigmund Freud, religion and spirituality were expunged from psychiatry.

Religiosity is consistently and positively correlated with well-being; but there may be a chicken–egg relationship between social support and religious observance. For example, among churchgoers it is difficult to disentangle where spiritual faith ends and community support begins. Nevertheless, it makes sense that positive faith should enhance SWB. Heightened spirituality provides hope that bad events will diminish and lends wonder and joy to ordinary events. While the concept of spirituality still remains too value laden to serve as a 7th model of mental health, increasingly sophisticated neurological research on the positive emotions by investigators like Jan Panskepp, Marco Iacoboni, Barbara Fredrickson, and Andrew Newberg may find in the 21st century a role for spirituality among the models for mental health.

This chapter has so far suggested six conceptually distinct ways to assess a single construct—mental health. It would be a terrible mistake to believe any one of these six models superior to the others. From different vantage points they all measure the same thing. For example, case example, Richard Luckey not only had a GAF of 95, but another independent rater saw him as highly generative and a third rater saw him using defenses largely from level VII. He radiated SWB. Contrasting case example, Alfred Paine, had a GAF of 72, was not generative, used largely level II–V defenses, and was chronically dissatisfied with his life.

Table 3.6–2. Cross Correlation between Four Different Models of Mental Health at Midlife (Age 47) and Their Positive Prediction of Late Life (Age 65) Mental Health and Their Independence from Parental Social Class and Childhood Environment

<table>
<thead>
<tr>
<th>Model</th>
<th>A</th>
<th>C</th>
<th>D</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model A: ALS V</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Model C: Maturity</td>
<td>0.61</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Model D: Social intelligence</td>
<td>0.57</td>
<td>0.50</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Model F: Resilience</td>
<td>0.81</td>
<td>0.57</td>
<td>0.51</td>
<td>—</td>
</tr>
<tr>
<td>Subjective well-being age 65</td>
<td>0.44</td>
<td>0.32</td>
<td>0.42</td>
<td>0.35</td>
</tr>
<tr>
<td>Mental health at 65</td>
<td>0.52</td>
<td>0.38</td>
<td>0.43</td>
<td>0.50</td>
</tr>
<tr>
<td>Parental social class</td>
<td>0.08</td>
<td>0.05</td>
<td>0.12</td>
<td>0.06</td>
</tr>
<tr>
<td>Warm childhood environment</td>
<td>0.19</td>
<td>0.12</td>
<td>0.16</td>
<td>0.13</td>
</tr>
</tbody>
</table>

N = 160.
Correlations >0.25 significant at p < 0.001, n = 137–143.
Correlations >0.15 significant at p < 0.05.

Table 3.6–2 (from the Study of Adult Development at Harvard) provides an empirical illustration of the interrelationship of these different models in a 75-year prospective study of nondelinquent innercity men. Not only was each of four models (measured by independent raters) significantly correlated with the other three, but also each model predicted objective global mental health and SWB assessed 20 years later. Significantly, none of the four models was well predicted by parental social class, or a warm childhood environment.
In Table 3.6–2, Axis V was assessed by Luborsky’s HSRS. Maturity was determined by an assessment of presence or absence of Generativity. SWB at 55 was quantified by summing each man’s report of satisfaction over the past 20 years (on a 5 point scale) in four life areas (marriage, children, job, and friends) and, then, adding his best score from one of four additional areas (hobbies, sports, community activities, and religion). Social intelligence was assessed by objective evidence of good relations with friends, workmates, wife, children, and siblings. Resilience was measured by the relative frequency with which men deployed the five mature defenses against the relative frequency with which they used the five immature (level II–V) defenses (in Table 3.6–3). Mental Health at 65 reflected success at work, relationships, play, and not using psychiatrists. Parental social class used the method of Hollingshead and Redlich (parental residence, education, and occupation). Warm Childhood Environment reflected good relations with mother, father, siblings, and cohesive home at age 14.

Currently, four of this chapter’s models are capable of being assessed psychometrically—above average normality by the GAF (Axis V), maturity by the presence or absence of Generativity, SWB by self-report, and resilience by defense level on the optional DSM-IV axis. As already noted measures to assess psychometrically the other two models—the Strengths of Positive Psychology and socioemotional intelligence are underway.

The concept of mental health also raises the issue of therapeutic interventions to achieve it. What facets of mental health are fixed and which are susceptible to change? With Clozapine or with cognitive behavior therapy one can raise a GAF from 40 to 70, but how would one raise a GAF from 70 to 90? Chemicals can alleviate mental illness but do not improve healthy brain function. One can enhance mental health only through cognitive, behavioral and psychodynamic education.

One can change some facets of brain function better than others. By analogy, the most intensive educational intervention in individuals who are not severely deprived will raise their IQ only about 7 points, but sustained therapeutic intervention can change individuals utterly illiterate in Italian into fluent Italian conversationalists. Admittedly, a correct accent to go with the words is harder to teach.

In concluding this chapter it seems important to review some of the safeguards for a study of positive mental health. First, mental health must be broadly defined in terms that are culturally sensitive and inclusive. Second, the criteria for mental health must be empirically and longitudinally validated. Third, validation means paying special attention to cross-cultural studies. In somatic medicine, criteria have been developed so that people of widely varying backgrounds and beliefs can agree upon what constitutes rational therapy for disease. The same criteria for mental health need to be developed. Fourth, although mental health is one of humanity’s important values, it should not be regarded as an ultimate good in itself. One must proceed in efforts toward trying to improve mental health while maintaining due respect for individual autonomy.
There is no logically perfect method of analysis by which one can distinguish private bias and culturally determined value judgment from a culturally universal and scientifically valuable definition of mental health. Predictive validity remains the best guide. A parable offered by
the protagonist in Gotthold Lessing’s great 18th century play, *Nathan the Wise*, will help to illustrate why mental health can only be identified by longitudinal study. In Lessing’s play an angry sultan had asked Nathan, a Jew, on pain of death, to identify the one true religion—Christianity, Islam, or Judaism. Nathan gently pointed out the need to maintain a longitudinal perspective.

“A man lived in the East,  
Who owned a ring of marvelous worth,  
Given to him by a hand beloved.  
The stone was opal, and possessed the secret power  
To make the owner loved of God and man,  
If he but wore it in this faith and confidence...”

The ring was sought as an inheritance by each of Nathan’s three sons. Since he loved him all equally, the doting father gave each son an identical ring. After their father’s death, the three sons hurried off to a judge and demanded that the judge identify the lucky owner of one true ring. The judge exclaimed,

“But stop! I’ve just been told that the right ring,  
Contains the wondrous gift to make its wearer loved,  
Agreeable alike to God and Man.  
That must decide, for the false rings will not have this power…  
Let each one strive to gain the prize of proving by results  
The virtue of his ring and aid its power  
With gentleness and heartiest friendliness…  
The virtue of the ring will then  
Have proved itself among your children’s children.”

In the future, it is incumbent upon psychiatry to understand the implications of each of these six models of mental health. In conducting research on positive mental health, it is important for psychiatrists to recognize which model they use. Equally important, in the area of national health policy, one needs a clear understanding of not only what constitutes positive mental health, but also of who is responsible for intervention and of who is responsible for paying for it.

Finally, primary prevention is clearly superior to treating disease once it has occurred. Thus, we need to study individuals with positive mental health the way agronomists study wheat that is resistant to drought and blight. Psychiatry also needs to be able to measure and record mental health. Although room exists for improvement, Axis V, the Global Assessment of Functioning, provides the same reliability and has much greater predictive validity than the presence or absence of most Axis I and II designations. No psychiatric chart should be without Axis V. The capacities to work and to love over time are extremely important indices of mental health. They are far more important than the cross-sectional presence or absence of anxiety, depression, or illegal drug use. But capacity to work and to love must be assessed longitudinally. “How many years since age 21 have you spent employed?” is more useful than, “What is your present job?” Again, “Tell me about your longest intimate relationship” is more useful than “Are you married?”
Finally, assessment of maturational development provides with the best prediction of future clinical course. Thus, the mental status and diagnostic formulation should both reflect an assessment of social maturation and coping style. If the person is 35, have they mastered Erikson’s task of intimacy? If they are 40, have they achieved competence in, commitment to, contentment with and compensation from their career? If they are over 50, have they mastered Generativity and learned to care less about themselves and more about their children. Again, when the going gets tough, do they eschew less mature mental mechanisms like projection, passive aggression and dissociation (being in denial), and do they employ mature involuntary coping mechanisms like grit, humor, altruism, and sublimation.

REFERENCES


(Sadock 768)


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