

DJP3A - THEORIES OF PERSONALITY

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THEORIES OF PERSONALITY

UNIT I:

BASIC CONCEPTS OF PERSONALITY

1.1 Personality: Definition

The term personality is used in a number of ways including the apparent features of a person. However, psychologists use it to refer to the **characteristic pattern of thinking, feeling and acting**. By characteristic pattern we mean the **consistent and distinctive ways our ideas, feelings and actions are organized**. When we talk about personality we usually refer to the totality or whole of the person. Thus, the enduring pattern expressed by the person in various situations is the hall mark of personality. Interestingly the theories of personality go beyond the literal meaning of “personality” which stands for large masks used by actors in ancient Greek drama. Contrary to this the personality theorists view ‘personality’ as the essence of the person. It is a person’s “true” inner nature. The unique impression that a person makes on others is equally important in understanding personality. However the concept of personality has been defined by psychologists in many ways and it is the theoretical perspective or position which directs our attention to particular aspects of personality.

Understanding personality has proved to be a difficult and challenging task. It’s so complex that no single theory is able to cover the total personality. The different theories approach the structure and functioning of personality from different positions. There are many theories of personality each provides different answers about the way they treat the issues about personality functioning. In particular, they provide different explanations about the role of conscious/unconscious factors, determinism/freedom in functioning, role of early experience, role of genetic factors, uniqueness/universality etc. In the present lesson you will learn about four major theoretical perspectives of personality. They include psychoanalytic, trait, humanistic and social-cognitive perspectives.

1.2 History and nature

Historically, personality theory was taught from a ‘grand theorist’ approach in which selected theories proposed by individuals were presented separately. Many of these theorists (Sigmund Freud, Alfred Adler, Gordon Allport, Carl Rogers, to name a few) have become well known and are cited in most introductory psychology texts. (See Table 1.2.) This telling of our discipline’s history has the advantage of presenting comprehensive theories that have an internal logic, but the disadvantage of omitting or understating more recent advances that seldom fit this model. The classical grand theories often reflected the professional and life experience of their originators (Monte 1977), and their fundamental assumptions (Skinner’s belief in environmental determination; Maslow’s optimism; Freud’s assumption of conflict) are not universally shared. This particularity fosters fragmentation in the discipline of personality. Followers of each grand

theorist adopted, applied and revised the competing theories in relative isolation, only occasionally reaching across their separate schools of thought to find a common language. As the history of personality theory is generally told, diverse theoretical paradigms as they were described by philosopher of science, Thomas Kuhn (1970) have coexisted, and the field – like the early physical sciences that Kuhn described – has not agreed upon a shared paradigm that would foster cooperation and steady incremental scientific growth. Instead, it is divided by conflict among paradigms. Others describe the competition but doubt that the combatants have. Conceptual issues in personality theory matured sufficiently to be labelled paradigms in the Kuhnian sense. In either case, personality is a fragmented discipline. The conceptual breadth of each of the grand theories and their implications for practice and research contributed to their historical importance.

Table 1.2 Milestones in the history of personality.

1890	William James publishes Principles of psychology (with sections on the self and other personality-related issues)
1900	Sigmund Freud publishes The interpretation of dreams
1907	Alfred Adler publishes A study of organic inferiority and its psychical compensation
1908	Mary Calkins describes the self (in several papers)
1910	Carl Jung publishes The association method (research on complexes)
1923	Sigmund Freud publishes The ego and the id (structures of personality)
1927	Gordon Allport publishes Concepts of trait and personality
1935	Henry Murray publishes the Thematic Apperception Test (TAT)
1936	Anna Freud publishes The ego and the mechanisms of defence
1937	Gordon Allport publishes Personality: a psychological interpretation
1937	Karen Horney publishes The neurotic personality of our time
1938	B. F. Skinner publishes The behaviour of the organisms
1938	Henry Murray publishes Explorations in personality
1939	John Dollard and Neal Miller publish Frustration and aggression
1943	Abraham Maslow publishes A theory of human motivation
1950	Erik Erikson publishes Childhood and society
1951	Carl Rogers publishes Client-centered therapy
1952	Hans Eysenck publishes The structure of human personality
1954	Abraham Maslow publishes Motivation and personality
1955	Lee Cronbach and Paul Meehl publish Construct validity in psychological tests
1955	George Kelly publishes The psychology of personal constructs
1957	Lee Cronbach publishes The two disciplines of scientific psychology
1961	The Journal of Humanistic Psychology begins
1961	Albert Bandura and collaborators describe learning of aggression through modelling (Bobo doll study)
1962	Founding of the Association for Humanistic Psychology
1967	Hans Eysenck publishes The biological basis of personality
1968	Abraham Maslow publishes Toward a psychology of being
1968	Walter Mischel challenges the trait model in Personality and assessment
1971	B. F. Skinner publishes Beyond freedom and dignity
1973	Albert Bandura publishes Aggression: a social learning analysis
1976	Richard Dawkins publishes The selfish gene

- 1978 Mary Ainsworth describes attachment in young children
- 1987 McCrae and Costa present data on the Five-Factor trait Model
- 1987 Daniel Schachter describes implicit memory (alternative view of unconscious cognition)
- 1989 David Buss describes cross-cultural universals in the evolution of mating behaviour
- 2000 Martin Seligman and Mihaly Csikszentmihalyi publish Positive psychology: an Introduction

Additionally, foundation issues social factors elevated their influence, including many theorists' professorships at prestigious institutions, such as Harvard University, where they influenced the next generation of personality psychologists. Hall and Lindzey's (1957) influential personality textbook gave enduring recognition to many of these theorists (including Freud and Jung), adding others with new editions (e.g., Eysenck, Bandura and Kelly in the 1978 third edition). Even its fourth edition (Hall, Lindzey and Campbell 1998) continues the 'grand theorist' organizational structure, which has been adopted by many others (e.g., Ewen 2003; Feist and Feist 2001; Schultz and Schultz 2005). To be sure, these 'grand theorists' are grouped to show shared perspectives (e.g., psychoanalytic, humanistic, behavioural or learning, and so on), and the underlying assumptions of the theories (such as Rogers' assumption that people have, at core, a tendency toward self-actualization) can be elaborately compared across theories (Maddi 1996, 2006).

Sometimes the great names are omitted from all or at least some chapter titles to call attention to the underlying theoretical perspectives or to acknowledge the difficulty of selecting a single seminal founder of a particular perspective (Carver and Scheier 2008; Cloninger 2008; Magnavita 2002). Explicit discussion of future trends that build on, but go beyond, these grand theories may be added briefly as a final chapter (Ryckman 2004). This provides some sense of theoretical progress over time, both within these perspectives, and in the historical waxing and waning of the various perspectives. Nonetheless, both the grand theorist approach and the competing perspectives organization of this approach portray the field of personality as fragmented. Another approach is to focus on the content areas in which personality research is conducted – a topical organization of the field (Cervone and Pervin 2008; Larsen and Buss 2008).

Connections with historical grand theories remain (as is to be expected) in some areas, but the focus shifts to particular areas of research and limited domain theories, instead of the broad comprehensive theories of the past. This strategy avoids undue preoccupation with affirming or challenging the fundamental assumptions of a theory, and avoids defending or attacking the theorist or accusing revisionists of disloyalty or personal pathology – a nonprofessional sort of discourse that has made its way even into scholarly journals. The topical approach facilitates research progress in particular content areas, though it lacks the integrative vision of a comprehensive theory. Could the prevailing fragmentation of personality theory be overcome? The effort has been made to portray an integrated field of personality, combining contributions from various theorists (Lester 1995), but in general, consensus is missing in describing the theoretical connections among the fragments in sufficient detail to guide researchers and practitioners. Personality remains split.

Psychology's two disciplines

Throughout the history of psychology, observers have noted a dichotomy between those who emphasize rigorous scientific methods, on the one hand, and those who in personality theory are more open to subjective experience and a holistic study of the person: what William James (1902) called the 'tough-minded' and the 'tender-minded'. This dichotomy has been variously called the 'two disciplines of scientific psychology', experimental and correlational (Cronbach 1957) and the 'two cultures', scientific and humanistic (Kimble 1984).

It reflects a broader intellectual rift between science and humanism, impacting both the content and methods of personality theory and research. As James indicated, the two poles arguably reflect the personalities of those on each side of the dichotomy (Conway 1992; Feist 2006). The founder of American psychology, William James (1890), included 'tenderminded' topics such as consciousness and religion from a viewpoint that embraced both psychology and philosophy. Gordon Allport, often credited with the founding of personality as a separate field, himself 'found a way to exploit the value in each [of these] perspective[s]', the science and the art of psychology (Gifford 2004). The 'tough-minded' pole, well represented in experimental laboratories modelled after that of Wilhelm Wundt, found its influence in personality through behaviourism, with the work of John B. Watson and, later, B. F. Skinner.

The other pole, the tender-minded or humanistic, persisted as well. For example, during the 1950s, Gardner Murphy took a more integrative stance, and a humanistic psychology movement grew, marking its entry by the establishment of the Association for Humanistic Psychology in 1962, with Abraham Maslow, Carl Rogers and Rollo May among the founding members. Today, we feel the tension between those who would emphasize the physical basis of personality and those who tend toward thoughts and consciousness. Bridges are being forged, however, as theorists and researchers try to apply rigorous empirical methods to the 'big picture' issues like consciousness, religion and free will that early psychology left to the tender-minded (e.g., Greenberg, Koole and Pyszczynski 2004; Rychlak 1997).

1.2 Biological and Socio cultural determinants

The development of personality of an individual takes place in a socio-cultural context. The particular potentialities with which a child is born may develop or become stunted depending on the way maturation takes place and the kind of experiences encountered by the person. In the process of growth and development people develop unique configuration of traits which lead to individual differences. In this way one finds that personality formation is a complex process depending upon common and unique experiences on the one hand, and, genetic factors on the other. It has been indicated that there are stable ways in which specific situation trigger specific patterns of thought, feeling and behaviour.

Since personality is presumably learned in a familial and societal context, theory should elaborate on these processes. So far, progress is slow. The historical theories have proposed influences of the family (Freud, Adler), of gender (Horney), and of social class (Dollard and Miller), but all of these in a Euro- American context, and assuming the values and expectations of an individualistic society. More recently, cross-cultural investigations of personality measures

report similarities in the factor structure of personality tests across cultures, but there are differences too, and much theoretical and empirical work remains (Cahan and White 1992; Fung and Ng 2006; Norenzayan and Heine 2005; Rothbaum, Weisz, Pott et al. 2000; Sedikides, Gaertner and Vevea 2005).

Culture:

People living in one culture often share similar practices, beliefs and values. The child is expected to learn to behave in the manner expected by the culture. For instance boys and girls are expected to show different sets of personality characteristics. The various occupational roles are also shaped by culture. However, the effect of culture may not be uniform for everyone belonging to that culture because they are transmitted through different ways and persons and people also have certain unique experiences.

1.4 Genetic influence

Almost all theorists consider heredity as a major determinant of personality. Some like Freud, view personality as purely biological. However, others recognize the value of social and cultural factors. In fact it would be wrong to view the question in either or manner and give more emphasis to heredity or environment. Studies of behaviour genetics suggest that most personality variables are 15 to 50 percent inheritable.

1.5 Person by situation interaction

Most of the theorists of personality think that personality development is a continuous process. The early years play very important role in the shaping of personality. However, the immediate environment and experiences are also found to be of immense value.

Self-reflection is an implicit basis for using self-report questionnaires to measure personality. It is explicit in some theoretical formulations, such as those popular in recent decades that describe life stories or narratives as important aspects of identity and functioning (e.g., McAdams 1996), and those that emphasize self-concept and identity (Loevinger and Knoll 1983). In terror management theory, self-esteem provides a buffer against the anxiety caused by awareness of mortality (Greenberg, Pyszczynski and Solomon 1986; Pyszczynski, Greenberg, Solomon et al. 2004). The theoretical concept of possible selves demonstrates the power of self-reflective cognition to change behaviour, at least when the social context provides needed support and opportunity (Oyserman, Bybee and Terry 2006). Self-referent cognitions are obviously developed with experience, and so these concepts provide a place for theorists to link the influence of family and culture on personality.

1.6 Unresolved Problems in Personality

While explaining personality development family is found to play a critical role. The early relationships with members of family are particularly important. Freud thought that many of the problems during adult life are due to problematic child rearing practices leading to emotional disturbances. The sense of identity and relevance of appropriate modeling has been emphasized.

Some of the grand theorists, we know, drew on their own subjective life experience in developing their formal theories. Should a theory be a formalized version of personal insights that come from one's own experience, or does science require greater distance? Should personal experiences of research participants be data for theory validation? We know that, whether conceptualized as a defence mechanism or a cognitive deficit, people's self-understanding is error-prone (McKay, Langdon and Coltheart 2005), and so those reports should not necessarily be taken at face value. Nonetheless, people's first person experiences have proved a useful foundation issues concept throughout the history of psychology and personality theory. Approaches that emphasize people's subjective experience and the stories of their lives have a personal, lively appeal that cannot be matched by more abstract theories or comprehensive organizing schemes (cf., Loevinger 1996). Aside from their value for psychologists, such ideas also appeal to popular audiences. The introspectionist methods of early scientific psychology, at the beginning of the twentieth century, studied the mind by subjective observation, relying on subjects' verbal reports for data. The historical descriptions of introspectionism are often exaggerated and the usual version of a subsequent behavioural revolution and then a cognitive revolution in psychology is overly simplified (Costall 2006). Subjective experience, especially experience of ourselves, not of external stimuli, has been an important theme throughout the history of personality theories. Over a century ago, William James (1890) wrote thoughtfully on the self, retaining the idea of a 'spiritual me' from the era when scientific constraints had not yet strengthened their veto voice over such a soul-like idea, supplementing the spiritual self with a variety of selves (material, social, and so on) more appealing to a secular audience. Historians note that James' descriptions of the self resemble an earlier French publication by Paul Janet (Lombardo and Foschi 2003). With the rise of scientific psychology laboratories, the self received less attention, until its re-emergence with the personological emphases of Gordon Allport, Henry Murray, and others in the late 1930s (Coon 2000). Among therapists, Carl Rogers (1961) claimed that progress in psychotherapy requires attending to a person's experience of self. In this tradition, Bohart (2006) interprets diverse findings from psychotherapy research as evidence that it is the clients themselves, not their therapists, who are the most important change agents in psychotherapy.

UNIT II: PSYCHODYNAMISM

2.1 Psychodynamic Theories of Personality:

The first of the modern personality theories was developed by Sigmund Freud and is known as **psychoanalytic theory**. The psychiatric practice of this theory is called **psychoanalysis**. Freud's ideas were plentiful, profound, and often controversial. His theory about personality has had tremendous influence on societies around the world through many different disciplines. Not only psychology has been influenced and informed by the ideas of Freud, but also literature, art, philosophy, cultural studies, film theory, and many other academic subjects. Freud's theory represents one of the major intellectual ideas of the modern world. Right or wrong, these ideas have had a lasting and enormous impact.

Founded by Sigmund Freud, this theory emphasizes the influence of the unconscious, the importance of sexual and aggressive instincts, and early childhood experience on a person. Many of Freud's ideas have become part and parcel of every day usage.

2.2 Sigmund Freud

To understand Freud's theory of personality, we must begin with the concept of the **unconscious**. This is the cornerstone idea in psychoanalytic theory. Freud believed that most behaviors are caused by thoughts, ideas, and wishes that are in a person's brain but are not easily accessible by the conscious part of the mind. In other words, your brain knows things that your mind doesn't. This reservoir of conceptions of which we are unaware is called the unconscious. Psychoanalytic theory proposes that personality characteristics are mostly a reflection of the contents of the unconscious part of the mind.

Freud started his career as a neurologist. His theory developed in the course of his observations of his patients, as well as, self analysis. He used free association to help his patients recover forgotten memories. Freud discovered that mind is like an iceberg and we have limited conscious awareness.

Freud proposed that psychological forces operate at three levels of awareness:

Conscious level: The thoughts, feelings, and sensations that one is aware of at the present moment.

Preconscious level: It contains information of which one is not currently aware, however, they can easily enter conscious mind.

Unconscious level: It consists of thought, feelings, wishes, drives etc. of which we are not aware. It, however, influences our conscious level of activity. Freud thought that unconscious material often seeks to push through to the conscious level in a disguised manner. It may be in a distorted manner and or it may take a symbolic form. Interpretation of dreams and free association were used for analysis of the three levels of awareness.

Personality Structure

Freud believed that human personality emerges due to a conflict between our aggressive and pleasure seeking biological impulses and the internalized social restraints against them. Thus, personality arises in the course of our effort to resolve the conflicts. To this end he proposed three structures which interact with each other: Id, Ego and Super Ego. Let us learn about these structures:

Id: It is the unconscious, irrational part of personality. It is the primitive part immune to morality and demands of the external world. It operates on the pleasure principle. It seeks immediate satisfaction.

Ego: It is involved with the workings of the real world. It operates on the **reality principle**. It is the conscious, and rational part of personality that regulates thoughts and behaviors. It teaches the person to balance demands of external world and needs of the person.

Super Ego: It is the internal representation of parental and societal values. It works as the voice of conscience, that compels the ego to consider not only the real but also the ideal. It judges one's behaviors as right or wrong, good or bad. Failing up to moral ideals bring about the shame, guilt, inferiority and anxiety in the person.

Personality Development

On the basis of case-history of patients, Freud reached at a conclusion that personality development occurs through a sequence of psychosexual stages. In these stages the Id's pleasure seeking tendency focuses on different areas of body.

Stages of Psychosexual Development

Stages	Focus of activity
Oral (0-18 months)	Pleasure centers in the mouth and leads to activities of sucking and biting etc.
Anal (18-36 months)	Pleasure centers on bowel and bladder elimination
Phallic (4 to 6 years)	Pleasure centre is genitals Touching and fondling of genitals give pleasure
Latency (7 to 11 years)	Children repress their sexual impulses and channelize them into socially acceptable activities such as sports, arts.
Genital (From the onset of puberty)	Pleasure zone is the genital. Maturation of sexual interests

Defense Mechanisms

The Ego has to perform a difficult duty of mediating between the instinctual demands of Id and moral position of Super Ego. The Ego tries to solve the problem and if a realistic solution or compromise is not possible it indulges in distorting thoughts or perception of reality through certain processes called defense mechanisms. To defend or safeguard ourselves, we use technique called defense mechanism. These are also called Adjustment Mechanisms. Some of the key mechanisms are given below:

Mechanism Description

Denial Failure to recognize or acknowledge the existence of unpleasant event/information as I do not know, I have not seen etc. Displacement Emotional impulses are redirected toward one other i.e. substitute person/object Projection Attributing own unacceptable urges to others Rationalization Justifying our actions or feelings through socially acceptable explanations Reaction formation Thinking or acting in a way that is the extreme opposite of unacceptable urges Regression Retreating to behaviour characteristic of an earlier stage of development Repression Exclusion of anxiety producing thoughts, feelings or impulses from consciousness Sublimation Sexual urges are channelized into productive, nonsexual activities Freud's ideas have been controversial.

Freud theorized that healthy personality development requires a balance between the id and the superego. These two divisions of the mind are naturally at conflict with one another: The id attempts to satisfy animal, biological urges, while the superego preaches patience and restraint. The struggle between these two is an example of **intrapsychic conflict**—conflict within the mind. According to psychoanalytic theory, defense mechanisms are automatic (unconscious) reactions to the fear that the id's desires will overwhelm the ego. Freud believed that a healthy personality was one in which the id's demands are met but also the superego is satisfied in making the person feel proud and not overwhelmed by guilt. If the id is too strong, a person will be rude, overbearing, selfish, and animalistic. If the superego is too strong, a person is constantly worried, nervous, and full of guilt and anxiety and is always repressing the id's desires. An overly strong id makes one a psychopath, lacking a conscience, or an ogre, selfishly meeting one's needs without concern for others. An overly strong superego, on the other hand, makes one a worrier, a neurotic, so overwhelmed by guilt that it is difficult to get satisfaction. Sometimes it is said that the ego is the mediator between the id and the superego, but this is not what Freud said. The ego does not help to find compromise; the ego helps the id to satisfy its desires by focusing on what is real.

The neo-Freudians differed from Freud on a number of issues. Some of the key theorists who are included in this category are listed below.

2.3 Adler

Adler proposed that the central human motive is that of striving for superiority. It arises from feelings of inferiority that are experienced during infancy and childhood. During this period the child is helpless and depends on others for help and support. The psychoanalytic ideas have been criticized on the ground that there is inadequate evidence to support the theory.

Adlerian psychology still flourishes in certain parts of the United States. Alfred Adler (1870–1937) was an early follower of Freud who became a neo-Freudian because of his strong disagreement with Freud over a few issues. Adler’s theory is known as **individual psychology**. First, Adler assumed that we are motivated not so much by sexuality as by social urges. He considered our interest in social relationships to be an inborn drive. Second, Adler theorized the **creative self**, a subjective experience by which we interpret and find meaning in our experiences. Third and most important, Adler said that the primary motivation of humans was a **striving for superiority**. Because children are small and weak, Adler thought that they develop feelings of inferiority. If these feelings become overwhelming, a child develops an **inferiority complex**, which has to be overcome. The final goals toward which we all strive, according to Adler, are perfection, security, conquest, and being successful. Adler considered the striving for superiority to be the utmost drive of human beings and believed that it is inborn. When this striving goes too far, a person develops a **superiority complex** in which this drive is wrongly self-directed and aimed at selfish goals, such as power and self-esteem, whereas, according to Adler, a normal individual’s goals should be manifested in the social arena.

2.4 Carl Jung

Jung was opposed to the central role of sex and aggression in human life. Instead he proposed that people are motivated by more general psychological energy. He proposed that the deepest part of one’s psyche comprises the collective unconscious. It is a set of influences inherited from our family and the human race. The collective unconscious contains archetypes which are the mental images of a particular person, object or experience. Hero, powerful father, innocent child, nurturant mother are examples of archetypes.

2.5 Erikson

Sigmund Freud had a daughter named Anna, who also became a famous psychoanalyst. One of her star pupils was a teacher named Erik Erikson (1902–1994). He is one of very few people to become a psychoanalyst without being a psychiatrist. Erikson learned about Freudian psychology from Anna Freud, then moved to New York, where he took up the practice of psychoanalysis.

The funny thing is that Erikson noticed that most of his patients were not hung up on sexual problems, as the patients of Sigmund Freud reported, but instead talked about problems with understanding themselves and getting along with others. Erikson believed that Freud’s theory needed to be updated. In 1950, he wrote a book entitled *Childhood and Society*, in which he proposed a theory of **psychosocial development**.

Erikson converted Freud’s emphasis on sexuality to a focus on social relationships and then extended Freud’s five *psychosexual* stages to eight *psychosocial* stages. These stages became known as the **Eight Ages of Man**. (As you know, at that time in history, the word *man* was used to apply to all human beings. No sexist discrimination was intended.) Each of Erikson’s eight stages was described as a time of crisis—a time when the personality would go one way or the other. For example, you’ve likely heard of the identity crisis. Erikson theorized that during adolescence, we all face a crisis of figuring out who we are. Each of the stages has this either-or quality.

UNIT III: TRAIT, TYPE, ECLECTIC APPROACHES

3.1 Cattell

The Life of Cattell (1905–1998)

Cattell was born in Staffordshire, England, where he had a happy childhood. His parents were exacting about the standards of performance they expected from their children but permissive about how the children spent their time. Cattell and his brothers and friends spent much time outdoors, sailing, swimming, exploring caves, and fighting mock battles. He recalled that they “occasionally drowned or fell over cliffs.” When Cattell was 9, England entered World War I. A mansion near his home was converted to a hospital and he remembered seeing trainloads of wounded soldiers returning from the battlefields of France. He wrote that this experience made him unusually serious for a young boy and aware of the “brevity of life and the need to accomplish while one might.” His intense dedication to work may have originated from these experiences. He also felt highly competitive with an older brother and wrote of the problems of maintaining his own freedom of development while confronted with this brother who could not be “overcome” (Cattell, 1974a, pp. 62–63). At age 16, Cattell enrolled at the University of London to study physics and chemistry, graduating with honors in 3 years. His time in London intensified his interest in social problems, but he realized that training in the physical sciences did not equip him to deal with social ills. He decided that the best solution was to master the study of the human mind. This was a courageous decision to make in 1924 because the field of psychology in England offered few professional opportunities and only six academic professorships. It was regarded as a discipline for eccentrics. Against the advice of friends, Cattell began graduate studies at the University of London, working with the eminent psychologist-statistician Charles E. Spearman, who had developed the technique of factor analysis.

Awarded his Ph.D. in 1929, Cattell found that his friends had been correct: There were few jobs for psychologists. He did some lecturing at Exeter University, wrote a book about the English countryside, and established a psychology clinic for the schools in the city of Leicester, all while pursuing his own research interests. Whereas Spearman had used factor analysis to measure mental abilities, Cattell resolved to apply the method to the structure of personality. During this period, Cattell developed chronic digestive disorders resulting from overwork, a deficient diet, and being forced to dwell in a cold basement apartment. His wife left him due to his poor economic prospects and total absorption in his work. However, Cattell did claim some positive benefits to that time of hardship. The experience forced him to focus on practical problems rather than theoretical or experimental issues, which he might have done given more secure and comfortable circumstances. “Those years made me as canny and distrustful as a squirrel who has known a long winter. It bred asceticism, and impatience with irrelevance, to the point of ruthlessness” (Cattell, 1974b, p. 90). Eight years after he earned his doctoral degree, Cattell finally received an opportunity to work full-time in his chosen field. The prominent American psychologist Edward L. Thorndike invited Cattell to spend a year at Thorndike’s laboratory at Columbia University in New York. The following year, Cattell accepted a professorship at Clark University in Worcester, Massachusetts, and in 1941 moved to Harvard, where, he said, the “sap of creativity” rose (Cattell, 1974a, p. 71). His colleagues included Henry Murray, Gordon Allport, and William Sheldon, who was developing his theory of personality and body type.

Cattell married a mathematician who shared his research interests, and at the age of 40 settled at the University of Illinois as a research professor. He published more than 500 articles, as well as 43 books, a monumental accomplishment that reflects his dedication and perseverance. In his 70s, Cattell joined the graduate faculty of the University of Hawaii, where he permitted himself the luxury of swimming in the ocean every day. It was said that he worked “as hard as an assistant professor up for tenure and not sure that it will be granted” (Johnson, 1980, p. 300). He died in Honolulu at the age of 92. In 1997, Cattell received the Gold Medal Award for Life Achievement in Psychological Science from the American Psychological Association.

Cattell’s Approach to Personality Traits

Cattell defined **traits** as relatively permanent reaction tendencies that are the basic structural units of the personality. He classified traits in several ways (see Table).

Common Traits and Unique Traits

Cattell distinguished between common traits and unique traits. A **common trait** is one that is possessed by everyone to some degree. Intelligence, extraversion, and gregariousness are examples of common traits. Everyone has these traits, but some people have them to a greater extent than others. Cattell’s reason for suggesting that common traits are universal is that all people have a similar hereditary potential and are subject to similar social pressures, at least within the same culture.

People differ, as we said, in that they possess different amounts or degrees of these common traits. They also differ because of their **unique traits**, those aspects of personality shared by few other people. Unique traits are particularly apparent in our interests and attitudes. For example, one person may have a consuming interest in genealogy, whereas another may be passionately interested in Civil War battles or baseball or Chinese martial arts.

<i>Common traits</i>	Everyone shares common traits to some degree; for example, everyone has some measure of intelligence or of extraversion.
<i>Unique traits</i>	Each of us has unique traits that distinguish us as individuals; for example, a liking for politics or an interest in baseball.
<i>Ability traits</i>	Our skills and abilities determine how well we can work toward our goals.
<i>Temperament traits</i>	Our emotions and feelings (whether we are assertive, fretful, or easygoing, for example) help determine how we react to the people and situations in our environment.
<i>Dynamic traits</i>	The forces that underlie our motivations and drive our behavior.
<i>Surface traits</i>	Characteristics composed of any number of source traits, or behavioral elements; they may be unstable and impermanent, weakening or strengthening in response to different situations.
<i>Source traits</i>	Single, stable, permanent elements of our behavior.
<i>Constitutional traits</i>	Source traits that have biological origins, such as the behaviors that result from drinking too much alcohol.
<i>Environmental-mold traits</i>	Source traits that have environmental origins, such as the behaviors that result from the influence of our friends, work environment, or neighborhood.

Ability, Temperament, and Dynamic Traits

A second way to classify traits is to divide them into ability traits, temperament traits, and dynamic traits. **Ability traits** determine how efficiently we will be able to work toward a goal. Intelligence is an ability trait; our level of intelligence will affect the ways in which we strive for our goals. **Temperament traits** describe the general style and emotional tone of our behavior, for example, how assertive, easygoing, or irritable we are. These traits affect the ways we act and react to situations.

Dynamic traits are the driving forces of behavior. They define our motivations, interests, and ambitions.

Surface Traits and Source Traits

A third class of traits is surface traits versus source traits according to their stability and permanence. **Surface traits** are personality characteristics that correlate with one another but do not constitute a factor because they are not determined by a single source. For example, several behavioral elements such as anxiety, indecision, and irrational fear combine to form the surface trait labeled neuroticism. Thus, neuroticism does not derive from a single source. Because surface traits are composed of several elements, they are less stable and permanent and therefore less important in describing personality.

Of greater importance are **source traits**, which are unitary personality factors that are much more stable and permanent. Each source trait gives rise to some aspect of behavior. Source traits are those individual factors derived from factor analysis that combine to account for surface traits.

Constitutional Traits and Environmental-Mold Traits

Source traits are classified by their origin as either constitutional traits or environmental mold traits. **Constitutional traits** originate in biological conditions but are not necessarily innate. For example, alcohol intake can lead to behaviors such as carelessness, talkativeness, and slurred speech. Factor analysis would indicate that these characteristics are source traits. **Environmental-mold traits** derive from influences in our social and physical environments. These traits are learned characteristics and behaviors that impose a pattern on the personality. The behavior of a person reared in an impoverished innercity neighborhood is molded differently from the behavior of a person reared in upperclass luxury. A career military officer shows a different pattern of behavior from a jazz musician. Thus, we see that Cattell recognized the interaction between personal and situational variables.

Source Traits: The Basic Factors of Personality

After more than two decades of intensive factor-analytic research, Cattell identified 16 source traits as the basic factors of personality (Cattell, 1965). These factors are best known in the form in which they are most often used, in an objective personality test called the Sixteen Personality Factor (16 PF) Questionnaire (see Table).

Cattell presented the traits in bipolar form, and, as you can see, the personality characteristics associated with these traits are expressed in words we are likely to use in everyday conversation when describing our friends and ourselves. No doubt you can tell at a glance whether you score high, low, or somewhere in between on these basic personality factors. Cattell later identified additional factors he designated *temperament traits* because they relate to the general style and emotional tone of behavior.

He gave as examples excitability, zest, self-discipline, politeness, and self-assurance (Cattell, 1973; Cattell & Kline, 1977).

It is important to remember that in Cattell's system, source traits are the basic elements of personality just as atoms are the basic units of the physical world. He argued that psychologists cannot understand or generate laws about personality without describing precisely the nature of these elements.

Dynamic Traits: The Motivating Forces

We noted that Cattell described dynamic traits as the traits concerned with motivation, which is an important issue in many personality theories. Cattell believed that a personality theory that failed to consider the impact of dynamic, or motivating, forces is incomplete, like trying to describe an engine but failing to mention the type of fuel on which it runs.

Raymond B. Cattell (1905 -) has developed a different approach to the description and analysis of personality. He relies on data collected from three sources: a person's life record, self-ratings, and objective tests. Drawing from people's life records and self-ratings, Cattell identified major personality factors both within individuals and across people in general. These important factors were identified through complex statistical -- primarily correlational -- analyses, and they are listed in common language in Table 2.

Cattell's source traits (factors) of personality

Factor	Low scorers	High scorers
A	Reserved, aloof, detached	Outgoing, warmhearted, easygoing
B	Low in intelligence	High in intelligence
C	Low ego strength, easily upset, less emotionally stable	High ego strength, calm, emotionally stable
E	Submissive, obedient, docile, unsure, meek	Dominant, assertive, forceful
F	Serious, sober, depressed, worrying	Happy-go-lucky, enthusiastic, cheerful
G	Expedient, low in superego	Conscientious, high in superego
H	Timid, shy, aloof, restrained	Bold, adventurous
I	Tough-minded, self-reliant, demanding	Tender-minded, sensitive, dependent
L	Trusting, understanding, accepting	Suspicious, jealous, withdrawn
M	Practical, down-to-earth, concerned with detail	Imaginative, absentminded
N	Forthright, naïve, unpretentious	Shrewd, worldly, insightful
O	Self-assured, secure, complacent	Apprehensive, insecure, self-reproaching
Q ₁	Conservative, holds traditional values, dislikes change	Radical, liberal, experimenting, embraces change
Q ₂	Group-dependent, prefers to join and follow others	Self-sufficient, resourceful, independent
Q ₃	Uncontrolled, lax, impulsive	Controlled, compulsive, exacting
Q ₄	Relaxed, tranquil, composed	Tense, driven, fretful

Ergs and Sentiments

Cattell proposed two kinds of dynamic, motivating traits: ergs and sentiments. The word *erg* derives from the Greek word *ergon*, which means work or energy. Cattell used **erg** to denote the concept of instinct or drive. Ergs are the innate energy source or driving force for all behaviors, the basic units of motivation that direct us toward specific goals. Cattell's factor-analytic research identified 11 ergs.

These are:

- anger
- appeal
- curiosity
- disgust
- gregariousness
- hunger
- protection
- security
- self-assertion
- self-submission
- sex

Whereas an erg is a constitutional source trait, a **sentiment** is an environmental mold source trait because it derives from external social and physical influences. A sentiment is a pattern of learned attitudes that focuses on an important aspect of life, such as a person's community, spouse, occupation, religion, or hobby. Both ergs and sentiments motivate behavior, but there is a vital difference between them. Because an erg is a constitutional trait, it is a permanent structure of the personality. It may strengthen or weaken but it cannot disappear. A sentiment, because it results from learning, can be unlearned and can disappear so that it is no longer important to a person's life. (Cattell later called these learned traits SEMS, which stands for Socially Shaped Ergic Manifolds, which may be reason enough for us to continue to call them sentiments.)

Attitudes

Cattell defined **attitudes** as our interests in and our emotions and behaviors toward some person, object, or event. As Cattell applied the term, it does not refer exclusively to an opinion for or against something, which is a commonplace usage of the word *attitude*. Cattell's definition is broader, encompassing all our emotions and actions toward an object or situation.

Subsidiation

Our dynamic traits—the ergs and sentiments—are related to our attitudes through the concept of **subsidiation**, which means simply that within the personality some elements *subsidiates*, or are subordinate to, other elements. Attitudes are subsidiary to sentiments; sentiments are subsidiary to ergs.

Cattell expressed these relationships in a diagram he called the **dynamic lattice** (see Figure). Our motivating forces, the ergs, are listed at the right. Sentiments are indicated in the circles at the

center of the diagram. Note that each sentiment is subsidiary to one or more ergs. The attitudes, at the left, show the person's feelings and behaviors toward an object.

The Self-Sentiment

Each person's pattern of sentiments is organized by a master sentiment called the **self-sentiment**. This is our self-concept, reflected in virtually all of our attitudes and behaviors. The self-sentiment provides stability, coherence, and organization to the source traits and is linked to the expression of the ergs and sentiments. It is among the last of the sentiments to reach a full level of development. The self-sentiment contributes to the satisfaction of the dynamic traits and therefore controls all of the structures in the personality.

The Influences of Heredity and Environment

Cattell showed great interest in the relative influences of heredity and environment in shaping personality. He investigated the importance of hereditary and environmental factors by statistically comparing similarities found between twins reared in the same family, twins reared apart, nontwin siblings reared in the same family, and non twin siblings reared apart. Thus, he was able to estimate the extent to which differences in traits could be attributed to genetic or to environmental influences.

The results of his analyses showed that for some traits, heredity plays a major role. For example, Cattell's data suggest that 80 percent of intelligence (Factor B) and 80 percent of timidity-versus-boldness (Factor H) can be accounted for by genetic factors. Cattell concluded that overall, one-third of our personality is genetically based, and two-thirds is determined by social and environmental influences.

Stages of Personality Development

Cattell proposed six stages in the development of personality covering the entire life span (see Table).

The period of infancy, from birth to age 6, is the major formative period for personality. The child is influenced by parents and siblings and by the experiences of weaning and toilet training. Social attitudes develop along with the ego and the superego,

Cattell's stages of personality development

Stage	Age	Development
Infancy	Birth-6	Weaning; toilet training; formation of ego, superego, and social attitudes
Childhood	6-14	Independence from parents and identification with peers
Adolescence	14-23	Conflicts about independence, self-assertion, and sex
Maturity	23-50	Satisfaction with career, marriage, and family
Late maturity	50-65	Personality changes in response to physical and social circumstances
Old age	65+	Adjustment to loss of friends, career, and status

Feelings of security or insecurity, attitudes toward authority, and a possible tendency to neuroticism. Cattell was not a follower of Freud’s, but he incorporated in his theory several Freudian ideas, namely, that the early years of life are crucial in personality formation, and that oral and anal conflicts can affect personality.

Between ages 6 and 14, the childhood stage of personality formation, there are few psychological problems. This stage marks the beginning of a trend toward independence from parents and an increasing identification with peers. The childhood stage is followed by a more troublesome and stressful stage, adolescence, from 14 to 23. Emotional disorders and delinquency may be evident as young people experience conflicts centered on the drives for independence, self-assertion, and sex.

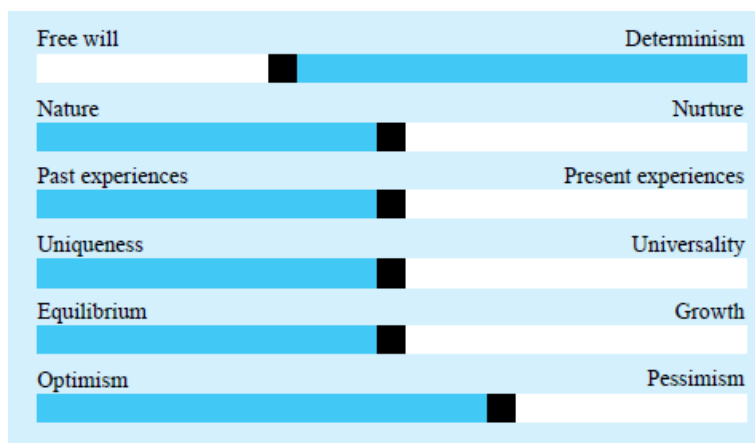
The fourth phase of development, maturity, lasts from approximately age 23 to age 50. It is generally a productive, satisfying time in terms of career, marriage, and family situations. The personality becomes less flexible, compared with earlier stages, and thus emotional stability increases. Cattell found little change in interests and attitudes during this period.

Late maturity, ages 50 to 65, involves personality developments in response to physical, social, and psychological changes. Health, vigor, and physical attractiveness may decline and the end of life may be in view. During this phase people re examine their values and search for a new self. You will recognize here the similarity with Carl Jung’s view of the midlife period. The final stage, old age, involves adjustments to different kinds of losses—the death of spouses, relatives, and friends; a career lost to retirement; loss of status in a culture that worships youth; and a pervasive sense of loneliness and insecurity.

Questions About Human Nature

Cattell’s definition of personality gives us clues about his view of human nature. He wrote, “Personality is that which permits a prediction of what a person will do in a given situation” (Cattell, 1950, p. 2).

For behavior to be considered predictable, it must be lawful and orderly. Prediction would be difficult without regularity and consistency in the personality. For example, Cattell noted that one spouse can usually predict with considerable accuracy what the other spouse will do in a given situation because that person’s past behaviour has been consistent and orderly. Therefore, Cattell’s view of human nature admits little spontaneity because that would make predictability more difficult. On the free will versus determinism issue, then, Cattell falls more on the side of determinism.



Cattell did not propose any ultimate or necessary goal that dominates behavior, no drive for self-actualization to pull us, no psychosexual conflicts to push us. Although Cattell noted the impact of early life events, we do not get the impression from his writings that he believed childhood forces determined the personality permanently. (See Figure)

Cattell accepted the influence of both nature and nurture. For example, one's constitutional traits and ergs are innate, whereas environmental-mold traits are learned. On the uniqueness-universality issue, Cattell took a moderate position, noting the existence of common traits, which apply to everyone in a culture, and unique traits, which describe the individual.

Cattell's personal view of human nature is more clear. In his younger years he was optimistic about our ability to solve social problems. He predicted we would gain greater awareness of and control over our environment. He expected to see the level of intelligence rise, along with the development of "a more gracious community life of creatively occupied citizens" (Cattell, 1974b, p. 88). Reality did not live up to Cattell's expectations, and eventually he came to believe that human nature and society had regressed.

Assessment in Cattell's Theory

Cattell's objective measurements of personality used three primary assessment techniques, which he called L-data (life records), Q-data (questionnaires), and T-data (tests).

Life records (L-data). The **L-data** technique involves observers' ratings of specific behaviors exhibited by research participants in real-life settings such as a classroom or office. For example, observers might record frequency of absence from work, grades at school, conscientiousness in performing job duties, emotional stability on the soccer field, or sociability in the office. The important point about L-data is that they involve overt behaviors that can be seen by an observer and occur in a naturalistic setting rather than in the artificial situation of a psychology laboratory.

Questionnaires (Q-data). The **Q-data** technique relies on questionnaires. Whereas L-data calls for observers to rate the research participants, Q-data requires research participants to rate themselves. Cattell recognized the limitations of Q-data. First, some research participants may have only superficial self-awareness, so their answers will not reflect the true nature of their personality. Second, even if research participants do know themselves well, they may not want researchers to know them.

Therefore, they may deliberately falsify their responses. Because of these problems, Cattell warned that Q-data must not automatically be assumed to be accurate.

Personality tests (T-data). The **T-data** technique involves the use of what Cattell called "objective" tests, in which a person responds without knowing what aspect of behavior is being evaluated. These tests circumvent the Q-data's shortcomings by making it difficult for a subject to know precisely what a test is measuring. If you cannot guess what the experimenter is trying to find out, then you cannot distort your responses to conceal your traits. For example, if you were shown an inkblot, you probably would not be able to predict whether the researcher's

interpretation of your response revealed that you were conservative, relaxed, adventurous, or apprehensive.

Cattell considered such tests as the Rorschach, the Thematic Apperception Test, and the word association test to be *objective* because they are resistant to faking.

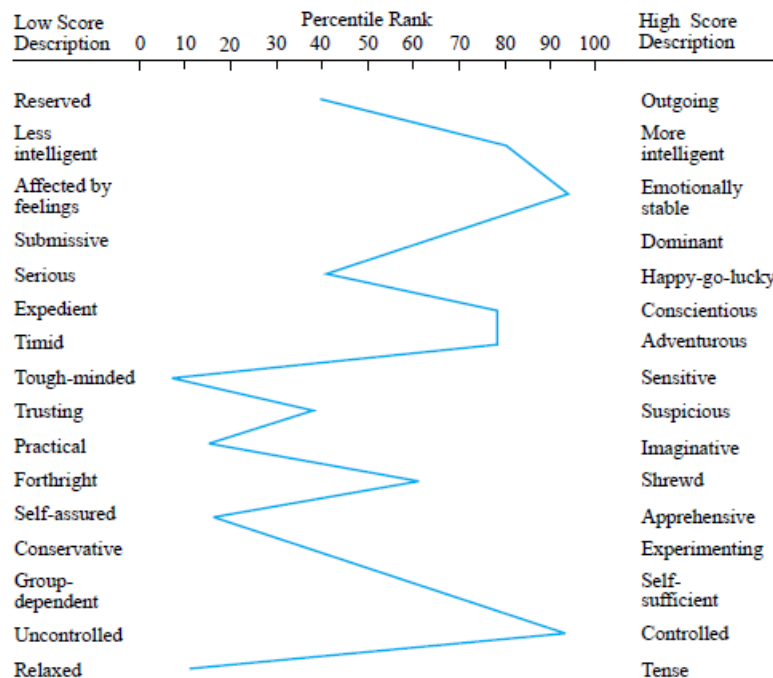
However, it is important to note that to most psychologists, this use of the word *objective* is misleading. As stated, such tests are usually called *subjective* because of the biases that affect scoring and interpretation.

The 16 PF (Personality Factor) Test

Cattell developed several tests to assess personality. The most notable is the 16 PF, which is based on the 16 major source traits. The test is intended for use with people 16 years of age and older and yields scores on each of the 16 scales. The responses are scored objectively; computerized scoring and interpretation are available. The 16 PF is widely used to assess personality for research, clinical diagnosis, and predicting occupational success. It has been translated into some 40 languages.

Consider the sample 16 PF Test profile for a hypothetical airline pilot (see Figure). By reading the high and low points of the plot of test scores, we can see that this person is emotionally stable, conscientious, adventurous, tough-minded, practical, self-assured, controlled, and relaxed. The pilot is not tense, apprehensive, or timid.

Cattell developed several variations of the 16 PF Test. Scales have been prepared to measure specific aspects of personality—such as anxiety, depression, and neuroticism—and for special purposes such as marriage counseling and performance evaluation of business executives. There are also versions of the test for use with children and with adolescents.



Research in Cattell's Theory

In discussing research methods, Cattell listed three ways to study personality: bivariate, clinical, and multivariate approaches. The *bivariate*, or two-variable, approach is the standard laboratory experimental method. The psychologist manipulates the independent variable to determine its effect on the research participants' behavior (the dependent variable). This approach has also been called univariate because only one variable is studied at a time. Cattell agreed that bivariate research is scientific, rigorous, and quantitative but argued that it dealt with only limited aspects of personality. In reality, personality is affected by many interacting variables. Also, in the typical artificial laboratory situation, significant emotional experiences cannot be manipulated and duplicated. Thus, for Cattell, the bivariate approach was too restrictive to reveal much about personality traits.

The *clinical* approach, which includes case studies, dream analysis, free association, and similar techniques, is highly subjective, as we noted in the chapters on the psychoanalytic theorists. These methods do not yield verifiable and quantifiable data. Cattell wrote, "The clinician has his heart in the right place, but perhaps we may say that he remains a little fuzzy in his head" (1959, p. 45).

Cattell chose to study personality through the *multivariate* approach, which yields highly specific data. It involves the sophisticated statistical procedure of factor analysis. Cattell favored two forms of factor analysis: the R technique and the P technique. The R technique involves collecting large amounts of data from a group of research participants. Correlations among all the scores are made to determine personality factors or traits. The P technique involves collecting a large amount of data from a single subject over a long period.

Let us consider only a few of the hundreds of factor-analytic studies Cattell and his associates conducted. We noted that he was interested in the relative effects on personality of heredity and environment. From a factor analysis of 16 PF data from 3,000 male research participants ages 12 to 18, Cattell concluded that three source traits were determined primarily by heredity (Cattell, 1982). These source traits are Factor F (serious versus happy-go-lucky), Factor I (tough-minded versus tenderminded or sensitive), and Factor Q3 (uncontrolled versus controlled). Three other traits were found to be determined primarily by environmental influences: Factor E (submissive versus dominant), Factor G (expedient versus conscientious), and Factor Q4 (relaxed versus tense).

Cattell also used the 16 PF Test to define the relationship between personality traits and marital stability (Cattell & Nesselroade, 1967). The research participants were married couples identified as having either a stable or an unstable marriage. The criterion for stability was whether a couple had taken steps toward dissolving the marriage. Factor analysis showed that marital stability could be predicted from the test scores. Partners in stable marriages had similar personality traits whereas partners in unstable marriages showed highly different personality traits.

Reflections on Cattell's Theory

Despite Cattell's legitimate claim that factor analysis is an objective, precise technique, critics note that the opportunity exists for subjectivity to affect the outcome. At several stages in the research process, decisions are required that may be influenced by personal preferences. In the initial step of data collection, the researcher must decide which tests to use and what aspects of behavior to measure. He or she then determines which factor analytic technique to apply and what level of statistical significance will be accepted as appropriate. Once the factors, or traits, have been identified, the researcher labels them.

If these names are ambiguous in any way, they may not accurately express the nature of the factors. This criticism does not suggest inherent weaknesses in Cattell's theory but that there is potential for subjective error in the factor-analytic approach. Perhaps it is this very subjectivity that accounts for the difficulty other researchers have had in replicating Cattell's findings and confirming his 16 basic source traits.

Cattell organized a huge amount of research, accumulating monumental quantities of experimental data in an area frequently characterized by case histories, intuitions, and speculations. However, the sheer quantity of Cattell's work and the complexity of the factor-analytic method are among the reasons for a general lack of acceptance of his theory.

He understood his failure to persuade other psychologists of the wisdom of his views and defended his approach as the only one of value for studying personality.

At the age of 85, he reiterated this point, criticizing contemporary psychologists for failing to master and apply factor analysis and lamenting that his work remained isolated from the mainstream of personality theorizing. He remained convinced that one day his work would allow for the prediction of human behavior with the same degree of accuracy with which astronomers predict the movements of planets (Cattell, 1974a, 1974b, 1990, 1993).

Cattell's publications may be described as widely respected but seldom read, at least in the United States. Sales of his 1970 undergraduate textbook, *The Scientific Analysis of Personality*, were higher in England, Germany, Australia, and Japan. European psychologists tend to rate his theory and research as being of greater relevance to the study of personality than American psychologists do.

Whatever the eventual outcome for Cattell's specific proposals, it is clear that the trait approach to personality and the investigation of genetic influences continue to fascinate contemporary researchers.

Behavioral Genetics

In our introductory remarks to Chapters 9 and 10 on trait approaches to personality, we noted growing evidence supporting the idea that some traits are influenced by hereditary factors. The area of study on the connection between genetics and personality is called **behavioral genetics**, and it has gained increasing acceptance and credibility. Regardless of the method used to evaluate or investigate personality, a significant genetic component must be considered. Allport and Cattell were among the first to suggest that inherited factors shape personality and rank in importance with environmental factors. In this section, we consider later researchers who have pursued this causal connection between our genetic inheritance and personality.

Table 2

CATTELL'S FACTOR THEORY

MAJOR PERSONALITY FACTORS

outgoing—reserved
more intelligent—less intelligent
stable—emotional
assertive—humble
happy-go-lucky—sober
conscientious—expedient
venturesome—shy
tender-minded—tough-minded
suspicious—trusting
imaginative—practical
shrewd—forthright
apprehensive—placid

Cattell distinguishes between surface traits, which are observable patterns of behavior, and source traits, which he viewed as underlying, internal traits responsible for our overt behavior. He viewed the source traits as more important. Source traits can be identified only by means of computer analysis of all the collected data. Cattell also distinguishes between general traits -- those possessed by all -- and specific traits -- those typical of only one person. Indeed, one of the major criticisms registered against these factor-analysis based theories is that by collapsing so

many data they lose the individual person in the process. Yet, if you observe carefully, it is possible to trace the increases and decreases in various response styles in a given individual over a period of time. Others -- perhaps rightly -- criticize the factor- and trait-theorists for not being theoretical at all. Rather, they are empirical, or data-oriented. This is true enough but not necessarily bad. Any set of theories emphasizing precision is not to be faulted only on that basis. Another problem is that once a collection of behaviors are shown to be correlated, researchers are then faced with attaching labels to what are essentially numerical (data) clusters. Whether such a cluster is labeled shyness, introversion, studiousness, or coldness can have an obvious impact on how personality is being analyzed. Despite this factor analytic theories have made substantial progress in the last two decades -- especially the work of H. J. Eysenck detailed in this book.

3.2 Eysenck

Hans Eysenck was born in Berlin, Germany, and emigrated to England in 1934, after Adolf Hitler came to power in Germany. Eysenck planned to study physics at the University of London but was told that he lacked the requisite academic background. Discouraged, he asked university officials if there was any other science in which he could major. Eysenck recalled, "I was told there was always psychology. 'What on earth is that?' I inquired in my ignorance. 'You'll like it,' they said. And so I enrolled in a subject whose scientific status was perhaps a little more questionable than my advisers realized" (Eysenck, 1980, p. 156). More than 40 years later, the highly successful and productive Eysenck was asked if he had ever regretted his career choice. Often, he noted, but admitted that he was resigned to it.

Over the course of a long, productive career, Eysenck published 79 books, including some for the general public, and 1,097 journal articles. At the time of his death, he was the world's most frequently cited psychologist (Farley, 2000). He developed several personality assessment devices including the Eysenck Personality Inventory, the Maudsley Medical Questionnaire, and the Maudsley Personality Inventory. His work has been pivotal in supporting the role of inheritance in the description of personality.

Behavioral genetics

The study of the relationship between genetic or hereditary factors and personality traits.

Extraversion/ introversion	Neuroticism/ emotional stability	Psychoticism/ impulse control
Sociable	Anxious	Aggressive
Lively	Depressed	Cold
Active	Guilt feelings	Egocentric
Assertive	Low self-esteem	Impersonal
Sensation seeking	Tense	Impulsive
Carefree	Irrational	Antisocial
Dominant	Shy	Creative
Venturesome	Moody	Tough-minded

Eysenck spent most of his career at the University of London's Maudsley Hospital and Institute of Psychiatry, conducting research on the measurement of personality. He agreed with Cattell that personality is composed of traits, or factors, derived by the factor-analytic method. Nevertheless, Eysenck has been a critic of factor analysis and of Cattell's research because of the potential subjectivity in the technique and the difficulty in replicating Cattell's findings. Although Eysenck used factor analysis to uncover personality traits, he supplemented the method with personality tests and experimental studies that considered a wide range of variables.

Eysenck and his wife, Sybil (Ph.D., University of London), together developed many of the questionnaires used in their research. The Eysenck Personality Inventory (Eysenck & Eysenck, 1963) required 12 years of joint research and 20 factor analyses. Hans Eysenck wrote, "although published in our joint names, [it] is largely a monument to her skill, patience, and endurance" (Eysenck, 1980, p. 172). Few scientists in any discipline have been so straightforward in acknowledging the research contributions of their spouses.

The result of their efforts is a personality theory based on three dimensions, defined as combinations of traits or factors. We might think of the dimensions as "superfactors" (Eysenck, 1990a, 1990b; Eysenck & Eysenck, 1985).

The three
personality dimensions are as follows.
E—Extraversion versus introversion
N—Neuroticism versus emotional stability
P—Psychoticism versus impulse control (or superego functioning)

Eysenck noted that the dimensions of extraversion and neuroticism have been recognized as basic elements of personality since the time of the ancient Greek philosophers. He also suggested that formulations of the same dimensions could be found on nearly every personality assessment device ever developed (Eysenck, 1997). Consider the list of personality traits associated with Eysenck's three personality dimensions score high on the traits of the E dimension would be classified as extraverts whereas people who score low would be classified as introverts.

Research has shown that the traits and dimensions Eysenck proposed remain stable throughout the life span from childhood through adulthood, despite the different social and environmental experiences each of us has. Our situations may change but the dimensions remain consistent. For instance, the introverted child tends to remain introverted as an adult. Eysenck also conducted considerable research on intelligence. Although he did not list intelligence as a personality dimension, he considered it an important influence on personality. He noted that a person with an IQ of 120 is likely to have a more complex and multidimensional personality than is a person with an IQ of 80. He presented evidence to suggest that some 80 percent of our intelligence is inherited, leaving only 20 percent as the product of social and environmental forces (Eysenck & Eysenck, 1985).

Extraversion

Based on your own experience, you can probably describe most extraverts and introverts with accuracy. Extraverts are oriented toward the outside world, prefer the company of other people,

and tend to be sociable, impulsive, adventurous, assertive, and dominant. In addition, people who score high on extraversion on the Eysenck Personality Inventory have been found to experience more pleasant emotions than those who score low on extraversion (Lucas & Fujita, 2000). Introverts are reported to be the opposite on these characteristics.

Eysenck was interested in how extraverts and introverts might differ biologically and genetically. He found that extraverts have a lower base level of cortical arousal than introverts do. Because the cortical arousal levels for extraverts are low, they need, and actively seek, excitement and stimulation. In contrast, introverts shy away from excitement and stimulation because their cortical arousal levels are already high (Eysenck, 1990b).

As a result, introverts react more strongly than extraverts to sensory stimulation. Studies have shown that introverts exhibit greater sensitivity to low-level stimuli and have lower pain thresholds than extraverts. Other research supports differential responses to sensory stimulation but reports less convincing evidence that such differences can be attributed to variations in cortical arousal levels (Bullock & Gilliland, 1993; Stelmack, 1997). Nevertheless, as Eysenck predicted, these differences are genetically based.

Neuroticism

Consider the traits associated with the neuroticism dimension. As you can see from Table , neurotics are characterized as anxious, depressed, tense, irrational, and moody. They may have low self-esteem and be prone to guilt feelings. Eysenck suggested that neuroticism is largely inherited, a product of genetics rather than learning or experience. It is manifested in biological as well as behavioral characteristics that differ from those of people at the emotional stability end of the neuroticism dimension.

People high in neuroticism show greater activity in those brain areas that control the sympathetic branch of the autonomic nervous system. This is the body's alarm system, which responds to stressful or dangerous events by increasing breathing rate, heart rate, blood flow to the muscles, and release of adrenaline. Eysenck argued that in neurotics, the sympathetic nervous system overreacts even to mild stressors, resulting in chronic hypersensitivity. This condition leads to heightened emotionality in response to almost any difficult situation. Indeed, neurotics react emotionally to events other people consider insignificant. According to Eysenck, these differences in biological reactivity on the neuroticism dimension are innate. People are genetically predisposed either toward neuroticism or toward emotional stability.

Psychoticism

People who score high in psychoticism are aggressive, antisocial, tough-minded, cold, and egocentric. Also, they have been found to be cruel, hostile, and insensitive to the needs and feelings of others. In addition, they are reported to have greater problems with alcohol and drug abuse than people who score low in psychoticism (Sher, Bartholow, & Wood, 2000). Paradoxically, people who score high in psychoticism

can also be highly creative. The research evidence tends to suggest a large genetic component. Men as a group generally score higher than women do on the psychoticism dimension. This finding led Eysenck to suggest that psychoticism may be related to male hormones. He also speculated that people who score high on all three dimensions may be apt to display criminal behavior but cited only modest empirical support for this idea (Eysenck & Gudjonsson, 1989). In Eysenck's view, society needs the diversity provided by people characterized by all aspects of these three personality dimensions. An ideal society affords each person the opportunity to make the best use of his or her traits and abilities.

However, some people will adapt to the social environment better than others will. The person high in psychoticism, for example, typified by hostile and aggressive behaviors, may become emotionally disturbed, or exhibit criminal tendencies, or channel the aggressive traits into a socially acceptable enterprise such as coaching college football.

The Primary Role of Heredity

To Eysenck, traits and dimensions are determined primarily by heredity, although the research evidence shows a stronger genetic component for extraversion and neuroticism than for psychoticism. Eysenck did not rule out environmental and situational influences on personality, such as family interactions in childhood, but he believed their effects on personality were limited (Eysenck, 1990a).

His research design involved comparisons of identical (monozygotic) and fraternal (dizygotic) twins. The studies showed that identical twins are more alike in their personalities than are fraternal twins, even when the identical twins were reared by different parents in different environments during childhood. Studies of adopted children demonstrate that their personalities bear a greater similarity to the personalities of their biological parents than of their adoptive parents, even when the children had no contact with their biological parents. This is additional support for Eysenck's idea that personality owes more to our genetic inheritance than to our environment.

Cross-cultural research demonstrates that Eysenck's three personality dimensions have been found consistently in more than 35 nations including the United States, England, Australia, Japan, China, Nigeria, and Sweden (see, for example, Bouchard, 1985; Eaves, Eysenck, & Martin, 1989; Floderus-Myrhed, Pedersen, & Rasmuson, 1980; Martin & Jardine, 1986; Tellegen et al., 1988). The confirmation of the same three personality dimensions in diverse cultures is further evidence for the primacy of inherited factors in the shaping of personality.

3.3 Allport

The Life of Allport (1897–1967)

Isolation and Identity

Born in Montezuma, Indiana, Allport was the youngest of four sons. His mother was a teacher and his father was a salesman who decided to become a doctor. They were in such dire financial

circumstances while the elder Allport attended medical school in Baltimore that he smuggled drugs from Canada into the United States and sold them to support the family. When the law came knocking on the front door, he skipped out the back and escaped over a fence. He took the family to Indiana and opened a private practice. Allport believed that his own birth there was his father's first case.

The piety and devout religious beliefs and practices of Allport's mother dominated the household. No smoking, drinking, dancing, or card playing were permitted, nor could a family member wear bright colors, distinctive clothing, or jewelry of any kind. Allport wrote that his mother was "on the severe side with a strong sense of right and wrong and quite strict in her moral ideals" (quoted in Nicholson, 2003, p. 17).

Too young to be a playmate to his older brothers, Allport was isolated from children outside the family as well. He recalled, "I fashioned my own circle of activities. It was a select circle, for I never fitted the general boy assembly" (Allport, 1967, p. 4). He later wrote, "I suffered agonies on the playground. I never really got on with my brothers. They didn't like me and they weren't kind and I couldn't possibly compete with them. They were all a little more masculine in type than I was" (quoted in Nicholson, 2003, p. 25). He described himself as skillful with words but not at sports or games and as someone who worked hard to be the center of attention of the few friends he did have.

In Allport's personality theory, one of the major propositions is that psychologically healthy adults are unaffected by childhood events. Perhaps reflecting this belief, Allport revealed little information about his childhood years. What he did tell, however, demonstrates a parallel between his own early experiences and the theory he later developed.

Arising from his childhood conditions of isolation and rejection, Allport showed inferiority feelings for which he attempted to compensate by striving to excel. He wrote about the identity quest that resulted from his inferiority feelings with respect to his brothers and other children. As Allport grew older, he began to identify with his oldest brother, Floyd, perhaps envious of his brother's accomplishments.

Well into adulthood, Gordon Allport continued to feel inferior compared to Floyd, whose achievements he tried to emulate. He followed Floyd to Harvard University and earned a Ph.D. in psychology, as Floyd had done. Floyd became a noted social psychologist, and even when Gordon was becoming well known himself in the field, the feelings of being in his brother's shadow persisted. At the age of 31, Gordon wrote that he had "published several articles of no great importance and [was] not to be confused with my more eminent brother" (quoted in Nicholson, 2003, pp. 168–169).

The attempt to emulate Floyd may have threatened Gordon's sense of identity. To assert his individuality, Gordon Allport may have been motivated to refute his identification with Floyd by declaring in his personality theory that his adult motives and interests were independent of his childhood feelings. He later formalized this idea as the concept of functional autonomy.

College Years

Although Allport ranked second in his high school graduating class of 100, he admitted to being uninspired about what to do next. At the end of the summer of 1915, he applied to Harvard and was accepted. He wrote, "Overnight my world was remade." Allport's college years were a great adventure for him as he discovered new frontiers of intellect and culture. But shocked by low grades on his first exams, he doubled his efforts and finished the year with straight A's. Allport's interest in social ethics and social service, acquired from his parents, was reinforced at Harvard. He did volunteer work for a boy's club, a group of factory workers, and a contingent of foreign students. He also worked as a probation officer. He found these activities satisfying because he genuinely liked to help people. "It gave me a feeling of competence, to offset a generalized inferiority feeling." He believed this kind of service reflected his search for an identity (Allport, 1967, pp. 5–7).

He took undergraduate courses in psychology but at that time did not intend to pursue a career in the field. He graduated in 1919 with a bachelor's degree, on the same day Floyd received his Ph.D. After graduation, Gordon spent a year on the faculty of Robert College in Istanbul, Turkey, and later accepted the fellowship Harvard offered for graduate study in psychology. His biographer noted, "The thought of becoming a psychologist and perhaps becoming more like his successful brother appealed to Allport" (Nicholson, 2003, p. 67).

The Meeting with Freud

On his return trip to the United States, Allport stopped in Vienna to see one of his brothers. While there, he sent a note to Sigmund Freud and received an invitation to visit the great man. When Allport entered Freud's office, he found Freud waiting patiently, expecting the young American to explain the purpose of his visit. The awkward period of silence lengthened until an uncomfortable Allport blurted out an account of an incident he had witnessed on the streetcar ride to Freud's office. He told of watching a small boy who had an obvious fear of dirt. Everything seemed dirty to the child.

He even changed his seat, telling his mother not to let a dirty man sit beside him. Freud studied the prim, proper, carefully groomed young man and asked, "Was that little boy you?" By asking this question, Freud was expressing his belief that the story Allport told betrayed his own unconscious fears and conflicts. Allport appeared to Freud to be "neat, meticulous, orderly and punctual—possessing many of the characteristics [he] associated . . . with the compulsive personality" (Pervin, 1984, p. 267). Henry Murray later commented that "Freud just hit [Allport] right on the head, right on the nose" (quoted in J. W. Anderson, 1990, p. 326). Allport was shaken by Freud's question. For the rest of his life, Allport denied that he was the superclean, proper little boy in the story but the incident clearly left a deep impression on him. Years later he wrote, "My single encounter with Freud was traumatic" (Allport, 1967, p. 22). He suspected that psychoanalysis probed the unconscious too deeply, as Freud tried to do with him. Psychology, Allport decided, should pay more attention to conscious or visible motivations. This was the path he chose for his study of personality.

The Study of Traits

Allport completed his Ph.D. at Harvard in 1922, after two years of graduate study. His dissertation, "An Experimental Study of the Traits of Personality," foreshadowed his lifelong work and was the first research conducted on personality traits in the United States. Awarded a traveling fellowship, Allport spent 2 years studying with noted psychologists in Germany and England. He returned to Harvard as an instructor, offering a course on the psychological and social aspects of personality, probably the first formal American college course on the subject. He spent nearly four decades at Harvard, conducting research on personality and social psychology and instructing several generations of students.

Considered an elder statesman in the field, Allport received many awards, including the American Psychological Foundation's Gold Medal, the American Psychological Association's Distinguished Scientific Contribution Award, and the presidencies of the American Psychological Association and the Society for the Psychological Study of Social Issues.

The Nature of Personality

In his book *Pattern and Growth in Personality*, Allport reviewed some 50 definitions of personality before offering his own. "Personality is the dynamic organization within the individual of those psychophysical systems that determine . . . characteristic behavior and thought" (Allport, 1961, p. 28).

Let us examine the key concepts in this definition. By *dynamic organization*, Allport means that although personality is constantly changing and growing, the growth is organized, not random. *Psychophysical* means that personality is composed of mind and body functioning together as a unit; personality is neither all mental nor all biological. By *determine*, Allport means that all facets of personality activate or direct specific behaviors and thoughts. The phrase *characteristic behaviour and thought* means that everything we think and do is characteristic, or typical, of us. Thus, each person is unique.

Heredity and Environment

To support his emphasis on the uniqueness of the individual personality, Allport stated that we reflect both our heredity and our environment. Heredity provides the personality with raw materials (such as physique, intelligence, and temperament) that may be shaped, expanded, or limited by the conditions of our environment. In this way, Allport invokes both personal and situational variables to denote the importance of both genetics and learning. However, our genetic background is responsible for the major portion of our uniqueness. An infinite number of possible genetic combinations exist, and, except for identical twins, the chance that someone else's genetic endowment will be duplicated in any one of us is too small to consider. Our genetic endowment interacts with our social environment, and no two people, not even siblings reared in the same house, have precisely the same environment. The inevitable result is a unique personality. Therefore, Allport concluded that to study personality, psychology must deal with the individual case and not with average findings among groups.

Two Distinct Personalities

Allport considered personality to be discrete, or discontinuous. Not only is each person distinct from all others, but each adult is also divorced from his or her past. He found no continuum of personality between childhood and adulthood. Primitive biological urges and reflexes drive infant behavior, whereas adult functioning is more psychological in nature. In a sense there are two personalities: one for childhood and one for adulthood. The adult personality is not constrained by childhood experiences. Thus, we have Allport's unique view of the nature of personality. He emphasized the conscious rather than the unconscious, the present and future rather than the past. He recognized the uniqueness of personality rather than proposing generalities or similarities for large groups of people. And he chose to study the normal rather than the abnormal personality.

Personality Traits

Allport considered personality **traits** to be predispositions to respond, in the same or a similar manner, to different kinds of stimuli. In other words, traits are consistent and enduring ways of reacting to our environment. He summarized the characteristics of traits as follows (Allport, 1937):

1. Personality traits are real and exist within each of us. They are not theoretical constructs or labels made up to account for behavior.
2. Traits determine or cause behavior. They do not arise only in response to certain stimuli. They motivate us to seek appropriate stimuli, and they interact with the environment to produce behavior.
3. Traits can be demonstrated empirically. By observing behavior over time, we can infer the existence of traits in the consistency of a person's responses to the same or similar stimuli.
4. Traits are interrelated; they may overlap, even though they represent different characteristics. For example, aggressiveness and hostility are distinct but related traits and are frequently observed to occur together in a person's behavior.
5. Traits vary with the situation. For example, a person may display the trait of neatness in one situation and the trait of disorderliness in another situation. Initially, Allport proposed two types of traits: individual and common. *Individual traits* are unique to a person and define his or her character. *Common traits* are shared by a number of people, such as the members of a culture. It follows that people in different cultures will have different common traits. Common traits are also likely to change over time as social standards and values change. This demonstrates that common traits are subject to social, environmental, and cultural influences.

Personal Dispositions

Because Allport realized that some confusion could result from calling both of these phenomena *traits*, he later revised his terminology. He relabeled common traits as **traits** and individual traits as **personal dispositions**. Our personal dispositions do not all have the same intensity or significance. They may be cardinal traits, central traits, or secondary traits.

A **cardinal trait** is so pervasive and influential that it touches almost every aspect of a person's life. Allport described it as a "ruling passion," a powerful force that dominates behavior. He offered the examples of sadism and chauvinism. Not everyone has a ruling passion, and those who do may not display it in every situation.

Everyone has a few **central traits**, some 5 to 10 themes that best describe our behavior. Allport's examples are aggressiveness, self-pity, and cynicism. These are the kinds of characteristics we would mention when discussing a friend's personality or writing a letter of recommendation.

The least influential individual traits are the **secondary traits**, which appear much less consistently than cardinal and central traits. Secondary traits may be so inconspicuous or weak that only a close friend would notice evidence of them. They may include, for example, a minor preference for a particular type of music or for a certain food.

Habits and Attitudes

As Allport developed his system, he argued that traits and personal dispositions are distinct from other characteristics, such as habits and attitudes. He agreed, however, that habits and attitudes are also capable of initiating and guiding behavior. You have only to consider your own **habits** to see how they influence the way you behave. Habits have a more limited impact than traits and personal dispositions because they are relatively inflexible and involve a specific response to a specific stimulus. Traits and personal dispositions are broader because they arise from the integration of several habits that share some adaptive function. In this way, habits may combine to form a single trait.

Children learning to brush their teeth or wash their hands before eating illustrate Allport's point. After a while these behaviors become automatic, or habitual.

Taken together, these habits are directed toward the same purpose and form the trait we label *cleanliness*.

It is more difficult to explain the difference between traits and **attitudes**. Consider patriotism: Is it a trait fostered by the traditions of a culture, or is it an attitude toward one's nation? Authoritarianism and extraversion could also be labeled both traits and attitudes. Allport did not resolve the question except to note that both categories would be appropriate.

However, it is possible to distinguish between traits and attitudes in two general ways. First, attitudes have some specific object of reference. A person has an attitude toward something, for example, toward red-haired people, a musical group, or a brand of athletic shoe. A trait or personal disposition is not specifically directed toward a single object or category of objects. A person with the personal disposition of shyness will interact with most other people in the same way, regardless of their hair or shoes. Therefore, traits are broader in scope than attitudes.

Second, attitudes are positive or negative, for something or against it. They lead a person to like or hate, accept or reject, approach or avoid an object. Unlike a trait or personal disposition, an attitude involves a judgment or evaluation.

Motivation: The Functional Autonomy of Motives

Allport believed that the central problem for any personality theory is how it treats the concept of motivation. Allport emphasized the influence of a person's present situation not only in his personality theory but also in his view of motivation. It is the individual's current state that is important, not what happened in the past during toilet training, schooling, or some other childhood crisis. Whatever happened in the past is exactly that: *past*. It is no longer active and does not explain adult behaviour unless it exists as a current motivating force.

Cognitive processes—that is, our conscious plans and intentions—are also important. Allport criticized approaches such as Freud's that focused on unconscious, irrational forces at the expense of the conscious and rational. Deliberate intentions are an essential part of our personality. What we want and what we strive for are the keys to understanding our behavior. Thus, Allport attempted to explain the present in terms of the future rather than in terms of the past.

Allport's concept of **functional autonomy** proposes that the motives of mature, emotionally healthy adults are not functionally connected to the prior experiences in which they initially appeared. Forces that motivated us early in life become autonomous, or independent, of their original circumstances. Similarly, when we mature, we become independent of our parents. Although we remain related to them, we are no longer functionally dependent on them and they should no longer control or guide our life. Allport offered the example of a tree. It is obvious that the tree's development can be traced to its seed. Yet when the tree is fully grown, the seed is no longer required as a source of nourishment. The tree is now self-determining, no longer functionally related to its seed.

Consider new college graduates embarking on a career in business and motivated to work hard to achieve financial success. Eventually their investment of time and energy pays off, and they amass enough money to be able to retire by age 50. Yet they continue to work just as hard as they did when first hired. Such behaviour can no longer be for the same goal—the goal of financial security has been reached and surpassed. The motivation to work hard, once a means to a specific end (for money), has now become an end in itself. The motive has become independent of its original source.

We are all familiar with similar instances: the skilled craftsperson who insists on doing a meticulous job even when the extra effort brings in no additional monetary reward, or the miser who chooses a life of poverty while hoarding vast wealth. The behavior that once satisfied a specific motive now serves only itself. The original motive has been transformed into something autonomous. Therefore, adult motives cannot be understood by exploring a person's childhood. The only way to understand them is to investigate why people behave as they do today.

Perseverative Functional Autonomy

Allport proposed two levels of functional autonomy: perseverative functional autonomy and appropriate functional autonomy. **Perseverative functional autonomy**, the more elementary level, is concerned with such behaviors as addictions and repetitive physical actions such as habitual ways of performing some everyday task. The behaviours continue or persevere on their own

without any external reward. The actions once served a purpose but no longer do so and are at too low a level to be considered an integral part of personality.

Allport cited both animal and human examples as evidence for perseverative functional autonomy. When a rat that has been trained to run a maze for food is given more than enough food, it may still run the maze, but obviously for some purpose other than the food. At the human level, consider our preference for routine, familiar behaviors we maintain even in the absence of external reinforcement.

Propriate Functional Autonomy

Propriate functional autonomy is more important than perseverative functional autonomy and is essential to the understanding of adult motivation. The word *propriate* derives from **proprium**, Allport's term for the ego or self. Propriate motives are unique to the individual. The ego determines which motives will be maintained and which will be discarded. We retain motives that enhance our self-esteem or self-image.

Thus, a direct relationship exists between our interests and our abilities: We enjoy doing what we do well.

The original motivation for learning a skill such as playing the piano may have nothing to do with our interests. For example, in childhood we may be forced to take piano lessons and to practice. As we become proficient, we may become more committed to playing the piano. The original motive (fear of parental displeasure) has disappeared, and the continued behavior of playing the piano becomes necessary to our self-image.

Our propriate functioning is an organizing process that maintains our sense of self. It determines how we perceive the world, what we remember from our experiences, and how our thoughts are directed. These perceptual and cognitive processes are selective. They choose from the mass of stimuli in our environment only those that are relevant to our interests and values. This organizing process is governed by the following three principles:

- Organizing the energy level
- Mastery and competence
- Propriate patterning

The first principle, *organizing the energy level*, explains how we acquire new motives. These motives arise from necessity, to help consume excess energy that we might otherwise express in destructive and harmful ways. For example, when people retire from their jobs, they have extra time and energy that, ideally, they should direct toward new interests and activities.

Mastery and competence, the second principle, refers to the level at which we choose to satisfy motives. It is not enough for us to achieve at an adequate level. Healthy, mature adults are motivated to perform better and more efficiently, to master new skills, and to increase their degree of competence. The third principle, *propriate patterning*, describes a striving for consistency and integration of the personality. We organize our perceptual and cognitive processes around the self, keeping what enhances our self-image and rejecting the rest. Thus, our propriate motives are dependent on the structure or pattern of the self.

Allport noted that not all behaviors and motives could be explained by the principles of functional autonomy. Some behaviors—such as reflexes, fixations, neuroses, and behaviors arising from biological drives—are not under the control of functionally autonomous motives.

Personality Development in Childhood: The Unique Self

As we noted, Allport chose the term *proprium* for the self or ego. He rejected the words *self* and *ego* because of the diversity of meanings ascribed to them by other theorists. We can best understand the word *proprium* by considering it in the sense of the adjective *appropriate*. The *proprium* includes those aspects of personality that are distinctive and thus appropriate to our emotional life. These aspects are unique to each of us and unite our attitudes, perceptions, and intentions.

Stages of Development

Allport described the nature and development of the *proprium* over seven stages from infancy through adolescence (see Table). Before the *proprium* begins to emerge, the infant experiences no selfconsciousness, no awareness of self. There is not yet a separation of “me” from everything else. Infants receive sensory impressions from the external environment and react to them automatically and reflexively, with no ego to mediate between stimulus and response. Allport described infants as pleasure seeking, destructive, selfish, impatient, and dependent. He called them “unsocialized horrors.” Our genetic inheritance, which is the basis of our eventual personality, does exist in infancy, but there is little of what could be called a “personality.” The infant simply is driven by reflexes to reduce tension and maximize pleasure.

The first three stages in the development of the *proprium* span the years from birth to about age 4. The bodily self develops when infants begin to be aware of what Allport referred to as a “bodily me.” For example, infants begin to distinguish between their own fingers and the object they are grasping. Next, the self-identity stage is marked by a sense of continuity of one’s identity. Children realize that they remain the same people, despite changes in their bodies and their abilities. Self-identity is enhanced when children learn their name and see themselves as distinct from other people. Self-esteem develops when they discover that they can accomplish things on

The development of the *Proprium*

Stage	Development
1. <i>Bodily self</i>	Stages 1–3 emerge during the first three years. In this stage, infants become aware of their own existence and distinguish their own bodies from objects in the environment.
2. <i>Self-identity</i>	Children realize that their identity remains intact despite the many changes that are taking place.
3. <i>Self-esteem</i>	Children learn to take pride in their accomplishments.
4. <i>Extension of self</i>	Stages 4 and 5 emerge during the fourth through sixth year. In this stage, children come to recognize the objects and people that are part of their own world.
5. <i>Self-image</i>	Children develop actual and idealized images of themselves and their behavior and become aware of satisfying (or failing to satisfy) parental expectations.
6. <i>Self as a rational copier</i>	Stage 6 develops during ages 6–12. Children begin to apply reason and logic to the solution of everyday problems.
7. <i>Propriate striving</i>	Stage 7 develops during adolescence. Young people begin to formulate long-range goals and plans.
<i>Adulthood</i>	Normal, mature adults are functionally autonomous, independent of childhood motives. They function rationally in the present and consciously create their own lifestyles.

their own. They are motivated to build, explore, and manipulate objects, behaviours that sometimes can be destructive. If parents frustrate their child’s need to explore at this stage, then the emerging sense of self-esteem can be thwarted, replaced by feelings of humiliation and anger.

The extension-of-self stage involves the growing awareness of objects and people in the environment and the identification of them as belonging to the child. Children speak of “my house,” “my parents,” and “my school.” A self-image develops next, incorporating how children see and would like to see themselves. These actual and ideal self-images develop from interaction with the parents, who make the child aware of their expectations and of the extent to which the child is satisfying or failing to satisfy those expectations. The self-extension and self-image stages typically occur between the ages of 4 and 6.

The self as a rational copier stage occurs between ages 6 and 12, when children realize that reason and logic can be applied to solving everyday problems. The propriate striving stage follows, when adolescents begin to formulate plans and goals for the future. Until they do so, their sense of self (their proprium) will remain incomplete

Parent–Child Interactions

Our social interaction with our parents is vitally important throughout the stages of the development of the proprium, or self. Of particular significance is the infant–mother bond as a source of affection and security. If the mother or primary caregiver provides sufficient affection and security, the proprium will develop gradually and steadily, and the child will achieve positive psychological growth. Childhood motives will be free to be transformed into the autonomous propriate strivings of adulthood. A pattern of personal dispositions will form and the result will be a mature, emotionally healthy adult.

If childhood needs are frustrated, however, the *proprium* will not mature properly. The child becomes insecure, aggressive, demanding, jealous, and self-centered. Psychological growth is stunted. The result is a neurotic adult who functions at the level of childhood drives. Adult motives do not become functionally autonomous but remain tied to their original conditions. Traits and personal dispositions do not develop and the personality remains undifferentiated, as it was in infancy.

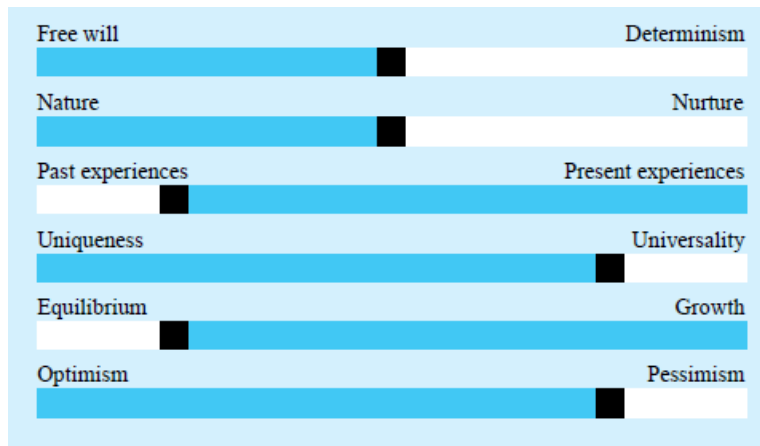
The Healthy Adult Personality

In Allport's view, the healthy personality changes from being a biologically dominated organism in infancy to a mature psychological organism in adulthood. Our motivations become separated from childhood and are oriented toward the future. As we noted, if our childhood needs for affection and security have been met, the *proprium* will develop satisfactorily. The adult personality grows out of childhood but is no longer dominated or determined by childhood drives. Allport did not explain whether the neurotic adult could counteract or overcome unfortunate childhood experiences; he was more interested in positive psychological growth. He described six criteria for the normal, mature, emotionally healthy, adult personality:

1. The mature adult extends his or her sense of self to people and to activities beyond the self.
2. The mature adult relates warmly to other people, exhibiting intimacy, compassion, and tolerance.
3. The mature adult's self-acceptance helps him or her achieve emotional security.
4. The mature adult holds a realistic perception of life, develops personal skills, and makes a commitment to some type of work.
5. The mature adult has a sense of humor and self-objectification (an understanding of or insight into the self).
6. The mature adult subscribes to a unifying philosophy of life, which is responsible for directing the personality toward future goals.

By meeting these six criteria, adults can be described as emotionally healthy and functionally autonomous, independent of childhood motives. As a result, they cope with the present and plan for the future without being victimized by the experiences of their early years.

Normal, mature adults are functionally autonomous, independent of childhood motives. They function rationally in the present and consciously create their own lifestyles.



Questions About Human Nature

Allport's conception of functional autonomy and personality development holds that emotionally healthy adults are not tied to or driven by childhood conflicts. Thus, his theory presents an optimistic view of adults in conscious control of their lives, rationally attending to current situations, planning for the future, and actively fashioning an identity. Always in the process of becoming, we creatively design and implement an appropriate style of life, influenced more by events of the present and plans for the future than by our past (see Figure).

Allport took a moderate stance on the question of free will versus determinism. He granted free choice in our deliberations about our future, but he also recognized that some behaviors are determined by traits and personal dispositions. Once these behaviors are formed, they are difficult to change. On the nature-nurture issue, he believed that both heredity and environment influence personality. Our genetic background explains a significant portion of personality, supplying our basic physique, temperament, and level of intelligence. These raw materials are shaped by learning and experience. Allport believed in each person's uniqueness. Although common traits show some universality in behavior, individual traits or personal dispositions describe our nature more precisely.

To Allport, the ultimate and necessary goal of life is not to reduce tension, as Freud proposed, but rather to increase tension, impelling us to seek new sensations and challenges. When we have met one challenge, we are motivated to seek another. The reward is the process of achieving rather than the specific achievement, striving for the goal rather than reaching it. We require goals to motivate us and to maintain an optimal level of tension in the personality.

Allport's optimistic image of human nature was reflected in his personal liberal stance and his interest in social reform. The humanistic attitude expressed in his work was mirrored in his own personality. His colleagues and students recall that he genuinely cared about people and that these feelings were reciprocated.

Allport's suggested methods for assessing personality

- Constitutional and physiological diagnosis
- Cultural setting, membership, role
- Personal documents and case studies
- Self-appraisal
- Conduct analysis
- Ratings
- Tests and scales
- Projective techniques
- Depth analysis
- Expressive behavior
- Synoptic procedures (combining information from several sources in a synopsis)

Assessment in Allport's Theory: The Personal-Document Technique and the Study of Values

Allport wrote more about personality assessment techniques than most other theorists did. In his popular book *Pattern and Growth in Personality* (1961), he noted that, despite the existence of many approaches to assessment, there was no single best technique. Personality is so complex that to evaluate it we must employ many legitimate techniques. He listed 11 major methods (see Table) and relied heavily on the personal-document technique and the Study of Values. He also observed expressive behavior, which we discuss in the section on research in Allport's theory.

The Personal-Document Technique

The **personal-document technique** involves examining diaries, autobiographies, letters, literary compositions, and other samples of a person's written or spoken records to determine the number and kinds of personality traits. Allport's most famous case is an analysis of a collection of more than 300 letters written over a 12-year period by a middle-aged woman identified as Jenny (Allport, 1965, 1966).

It was later revealed that Jenny was the mother of Allport's college roommate and had written the letters to Allport and his wife (Winter, 1993a). A similar analysis can be performed with third-person material, such as case histories and biographies. In Allport's technique, a group of judges would read the autobiographical or biographical material and record the traits they found in it. Given a reasonable degree of agreement among the judges, the assessments can be grouped into a relatively small number of categories. In the research with Jenny's letters, 36 judges listed nearly 200 traits. Because many terms were synonymous, Allport was able to reduce them to eight categories.

One of Allport's students performed a computer analysis on the letters to find categories of words that might indicate the existence of a particular trait (Paige, 1966). For example, words expressing anger, rage, hostility, and aggression were coded as constituting the trait of aggression. This approach is more sophisticated and quantitative than Allport's original analysis of the letters because it involves fewer subjective judgments. The computer analysis yielded eight prominent traits in Jenny's personality similar to the categories Allport identified. Because of that consistency, Allport concluded that his subjective approach to personality assessment

provided information on traits that was valid and comparable to the more objective computer analysis.

The Study of Values

Allport and two colleagues developed an objective self-report assessment test called the Study of Values (Allport, Vernon, & Lindzey, 1960). They proposed that our personal values are the basis of our unifying philosophy of life, which is one of the six criteria for a mature, healthy personality. Our values are personality traits and represent strongly held interests and motivations. Allport believed that everyone possesses some degree of each type of value but one or two will be dominant in the personality.

The categories of values are as follows.

1. *Theoretical values* are concerned with the discovery of truth and are characterized by an empirical, intellectual, and rational approach to life.
2. *Economic values* are concerned with the useful and practical.
3. *Aesthetic values* relate to artistic experiences and to form, harmony, and grace.
4. *Social values* reflect human relationships, altruism, and philanthropy.
5. *Political values* deal with personal power, influence, and prestige in all endeavors, not just in political activities.
6. *Religious values* are concerned with the mystical and with understanding the universe as a whole.

Research in Allport's Theory: Expressive Behavior

Allport criticized psychologists who insisted that experimental and correlational methods were the only legitimate research approaches to the study of personality. He argued that not every aspect of personality could be tested in these ways. Therefore, psychologists should be more open and eclectic in their research methodology. He also opposed applying methods used with emotionally disturbed persons (such as case studies and projective techniques) to the study of emotionally healthy persons. Because case studies focus on the past, Allport considered them to be of no value for understanding normal adults because their personality is divorced from childhood influences.

Projective techniques, such as the Thematic Apperception Test and the Rorschach inkblot test, may present a distorted picture of the normal personality because they deal with unconscious forces that have little effect on the normal adult personality. Allport suggested that more reliable information could be obtained by simply asking people to describe themselves, a method that reveals their dominant traits.

Allport favored the idiographic approach—the study of the individual case—as indicated by his use of personal documents. However, he did use nomothetic methods when he believed them to be appropriate. Psychological tests such as the Study of Values employ the nomothetic approach. Allport conducted considerable research on what he called **expressive behavior**, described as behavior that expresses our personality traits. He also identified **coping behavior**, which is oriented toward a specific purpose and is consciously planned and carried out. Coping behavior

is determined by needs inspired by the situation and ordinarily is directed toward bringing about some change in our environment.

Expressive behavior is spontaneous and reflects basic aspects of the personality. In contrast to coping behavior, expressive behavior is difficult to change, has no specific purpose, and is usually displayed without our awareness. Allport offered the example of public speaking. The speaker communicates with the audience on two levels. The formal, planned level (coping behavior) includes the lecture's content.

The informal, unplanned level (expressive behavior) consists of the speaker's movements, gestures, and vocal inflections. The speaker may be nervous, talk rapidly, pace, or fidget with an earring. These spontaneous behaviors express elements of his or her personality.

In his landmark study of expressive behavior, Allport gave subjects a variety of tasks to perform and then judged the consistency of their expressive movements over the different situations (Allport & Vernon, 1933). He found a high level of consistency in voice, handwriting, posture, and gestures. From these behaviors, he deduced the existence of such traits as introversion and extraversion.

Research on expressive behavior has become more popular today than it was in Allport's time, several decades ago. There has been considerable theoretical and experimental work describing both facial and vocal expressive behavior (see Russell, Bachorowski, & Fernandez-Dols, 2003).

This research has shown that personality can be assessed from audiotapes, films, and videotapes. Facial expressions, vocal inflections, and idiosyncratic gestures and mannerisms reveal personality traits to a trained observer. The expressive behaviors linked to specific traits have even been assessed from still photographs (Allport & Cantril, 1934; Berry, 1990, 1991; DePaulo, 1993; Riggio & Friedman, 1986; Riggio, Lippa, & Salinas, 1990).

An analysis of the yearbook photographs of women college graduates found that those who exhibited positive emotional expressions at approximately age 21 scored higher on self-report inventories of feelings of subjective well-being when tested at ages 27, 43, and 52. They also reported better marriages and scored higher in affiliation, competence, and achievement orientation than did those who displayed less positive emotions in their yearbook pictures at age 21 (Harker & Keltner, 2001).

Researchers have accumulated an impressive body of evidence to show that some people can form reliable impressions of a stranger's personality based solely on facial appearance and expression (Berry & Wero, 1993). For example, studies have shown that observers accurately assess personality factors such as anxiety from watching a film of the person as brief as 30 seconds (Ambady & Rosenthal, 1992).

In another study, observers formed impressions of strangers by looking at their photographs. The assessments were found to be just as accurate as ratings made by classmates who had known the subjects for several weeks (Berry, 1990). These and similar studies provide strong support for Allport's proposition that expressive behaviour reflects personality traits.

A long-term research program conducted by Paul Ekman identified facial expressions of seven emotions that can be objectively and consistently distinguished from one another. These emotions are anger, contempt, disgust, fear, sadness, surprise, and happiness (Ekman, Matsumoto, & Friesen, 1997). Ekman, director of the Human Interaction Laboratory at the University of California at San Francisco, and his colleagues, have developed a coding system based on their analysis of 43 facial muscles. The system provides 3,000 different configurations useful in reading the emotional expressions in a person's face. This Facial Action Coding System (FACS) is currently being used in the United States by police departments, as well as the CIA and the FBI, to detect lying by criminal suspects and by terrorists. According to the FACS, tiny movements of their facial muscles will betray them (Kaufman, 2002).

Other research has shown that some basic aspects of personality are revealed by our facial expressions. For example, neuroticism reveals itself in looks of anger, contempt, and fear. Agreeableness shows in laughter and other expressions of friendly social interaction. Extraversion appears in smiles, laughter, and other expressions of enjoyment and amusement. Conscientiousness is marked by expressions of embarrassment including a tightly controlled smile, an averted gaze, and head movements down and away from the observer (Keltner, 1997). Sometimes our personal experiences can influence our ability to recognize emotions in the facial expressions of other people. For example, a study of 8- to 10-yearold children who had been physically abused showed that they could more readily identify facial displays of anger in pictures of female adults than could a control group of children who had not been abused (Pollak & Sinha, 2002).

Type A behavior, the pattern suggested to be associated with the potential for heart disease, has been distinguished from Type B behavior by expressions of disgust, glaring, grimacing, and scowling (Chesney, Ekman, Friensen, Black, & Hecker, 1997). A study of depressed patients in Switzerland found that facial expressions distinguished those who later attempted suicide from those who did not (Heller & Haynal, 1997). A study of college students in Japan found that those who scored high on a test of anxiety exhibited different facial expressions, particularly around the mouth and the left side of the face, than did those who scored low on anxiety (Nakamura, 2002). Obviously, we give away much of our inner self by the expression on our face.

Finally, there is the question of the universality of facial expressions. Do the same expressions reveal the same personality factors from one culture to another? The evidence is not consistent. Studies of American and Chinese infants and adults found that some basic emotions were revealed by identical facial expressions in both cultures and in both age groups (Albright et al., 1997; Camras, Oster, Campos, Miyake, & Bradshaw, 1997). However, a study comparing facial expressions of American, Chinese, and Japanese infants reached a different conclusion. Chinese infants showed consistently less variety in facial expressive behavior than American and Japanese infants. American infants differed significantly in facial expressions of emotions from Chinese infants but not so much from Japanese infants (Camras, 1998).

Reflections on Allport's Theory

Although considerable research has been conducted on expressive behavior, Allport's theory as a whole has stimulated little research to test its propositions. His idiographic research approach ran counter to the main current of thought in contemporary psychology, which accepted nomothetic research instead (the study of large subject groups through sophisticated statistical analysis). Allport's focus on emotionally healthy adults was also at variance with the then prevalent position in clinical psychology, which dealt with the neurotic and psychotic.

It is difficult to translate Allport's concepts into specific terms and operations suitable for study by the experimental method. For example, how do we observe functional autonomy or propiariate striving in the laboratory? How can we manipulate them to test their effects or the impact of other variables on them? Criticisms have been leveled against the concept of functional autonomy. Allport did not make clear how an original motive is transformed into an autonomous one. For example, once a person is financially secure, by what process is the motive to work hard for financial gain altered to become a motive to work hard for the sake of the task itself? If the mechanism of transformation is not explained, how can we predict which childhood motives will become autonomous in adulthood? Allport's emphasis on the uniqueness of personality has been challenged because his position focuses so exclusively on the individual that it is impossible to generalize from one person to another. Many psychologists find it difficult to accept Allport's proposed discontinuity between child and adult, animal and human, normal and abnormal. They point out that research on the behavior of children, animals, and emotionally disturbed subjects has yielded considerable knowledge about the functioning of the normal, emotionally healthy adult.

Despite these criticisms, Allport's theory has been well received in the academic community. His approach to personality development, his emphasis on uniqueness, and his focus on the importance of goals are reflected in the work of the humanistic psychologists Carl Rogers and Abraham Maslow. Interest in Allport's work has been revived recently as part of the current focus on personality traits, which is providing empirical support for some of his ideas. His books are written in a readable style and his concepts have a commonsense appeal. The emphasis on conscious, rational determinants of behavior provides an alternative to the psychoanalytic position that sees people irrationally and unconsciously driven by uncontrollable forces. Allport's view that people are shaped more by future expectations than by past events is congenial with a hopeful and humanistic philosophy. His most enduring contributions to psychology are making the study of personality academically respectable and emphasizing the role of genetic factors within a trait approach to personality.

3.4 Five factor model

Robert McCrae and Paul Costa: The Five-Factor Model

Using the factor-analytic method, the personality traits Cattell and Eysenck derived varies in number. This does not suggest an inherent weakness in the method but instead reflects the way each theorist chose to measure personality. Some personality researchers have expressed dissatisfaction with both theories, suggesting that Eysenck has too few dimensions and Cattell

has too many factors. More contemporary work has typically yielded five broad personality factors (see, for example, Digman, 1990; Goldberg, 1990; Wiggins & Trapnell, 1997).

Working at the Gerontology Research Center of the National Institutes of Health in Baltimore, Maryland, Robert McCrae (1949–) and Paul Costa (1942–) embarked on an extensive research program that identified five so-called robust or Big Five factors (McCrae & Costa, 1985b, 1987).

These factors are:

- Neuroticism
- Extraversion
- Openness
- Agreeableness
- Conscientiousness

The factors were confirmed through a variety of assessment techniques including self-ratings, objective tests, and observers' reports. The researchers then developed a personality test, the NEO Personality Inventory, using an acronym derived from the initials of the first three factors. The consistent finding of the same factors from different assessment procedures suggests that these factors can be relied on as distinguishing aspects of personality. The five factors and their characteristic traits are listed in Table

Factor	Description
Neuroticism	Worried, insecure, nervous, highly strung
Extraversion	Sociable, talkative, fun-loving, affectionate
Openness	Original, independent, creative, daring
Agreeableness	Good-natured, softhearted, trusting, courteous
Conscientiousness	Careful, reliable, hardworking, organized

Other researchers, following the lead provided by McCrae and Costa, developed adjective checklists that have proven to be quicker measures of the five factors. Research participants respond to the lists by selecting the words that best describe themselves. One such list uses 100 adjectives to measure the five factors; another uses only 40 (Goldberg, 1992; Saucier, 1994). Another successful approach to measuring the Big Five factors and their personality traits uses a structured interview consisting of 120 items to which research participants respond orally (Trull et al., 1998). It is important to note that even though other tests have been proposed as ways to measure the Big Five factors, the NEO remains the most frequently used technique (De Raad, 2000). However, research has shown that the NEO, like most personality tests, can be distorted by the behavior of research participants who want to create the impression of positive psychological adjustment (Ballenger, Caldwell- Andrews, & Baer, 2001).

We can see a resemblance between the extraversion and neuroticism factors of McCrae and Costa and the extraversion and neuroticism dimensions of Eysenck's theory. Further, agreeableness and conscientiousness in the McCrae-Costa model may represent the low end of Eysenck's psychoticism dimension (impulse control). Openness shows a high positive correlation with intelligence. Similarly, agreeableness correlates with Alfred Adler's concept of social interest (McCrae & Costa, 1991; Zuckerman, 1991).

Studies of twins have found that four of the five factors show a stronger hereditary component: neuroticism, extraversion, openness, and conscientiousness.

Agreeableness was found to have a stronger environmental component (Bergeman et al., 1993; Pedersen et al., 1988).

Cross-Cultural Consistency

The five factors have been consistently observed in Eastern as well as Western cultures, a finding that also supports a genetic component (Buss, 1991; Digman, 1989; Narayanan, Menon, & Levine, 1995; Paunonen et al., 1992). As McCrae and Costa noted, the Big Five factors and their traits appear to represent a “common human structure of personality” that transcends cultural differences (McCrae & Costa, 1997, p. 515). The diverse cultures in which these five factors and their traits have been found include the following: British, German, Portuguese, Czech, Turkish, Hebrew, Chinese, Korean, Japanese, French, Filipino, and Canadian, as well as native-born and Spanishspeaking residents of the United States (see, for example, Benet-Martinez & John, 1998; Jang & Livesley, 1998; Katigbak, Church, Guanzon-LaPeña, Carlota, & del Pilar, 2002; McCrae & Costa, 1997; McCrae, Costa, Pilar, Rolland, & Parke, 1998; McCrae et al., 2000; Trull & Geary, 1997).

Although the same factors are common to many cultures, major differences have been recognized in their relative importance and social desirability. For example, Australians consider extraversion and agreeableness to be more desirable to have than the other three factors. By contrast, Japanese consider conscientiousness to be more important than all other factors. In other words, in Japanese society it is more important for a person to be conscientious than to be extraverted, agreeable, open, or even emotionally stable.

In Hong Kong and in India, agreeableness was found to be the most important factor. In Singapore, emotional stability was more important, whereas in Venezuela, the primary characteristic to praise is extraversion. No single factor was found to be more significant than others in Chile, Finland, Germany, the Netherlands, Norway, Turkey, and the United States (Williams, Satterwhite, & Saiz, 1998).

Stability of the Factors

The factors have been detected in children as well as adults. Longitudinal research studying the same research participants over a period of 6 years demonstrated a high level of stability for all five traits (Costa & McCrae, 1988). For example, persons high in agreeableness as children were likely to remain so as adults. A study in Finland of approximately 15,000 twins, ages 18 to 59, found a high degree of stability for both men and women on extraversion and neuroticism over that 40-year age span (Viken, Rose, Kaprio, & Koskenvuo, 1994). A study of 121 American men and women over 19 years, from late adolescence into adulthood, found modest but statistically significant stability for the extraversion and neuroticism factors (Carmichael & McGue, 1994). A comparison of more than 2,000 American and 789 Belgian adolescents over a 4-year period showed that the factors of extraversion, agreeableness, and conscientiousness remained stable, whereas openness to experience increased for both males and females (McCrae et al., 2002).

More than 3,000 men and women college graduates were tested for extraversion when they were students and again 20 years later. The researchers found a significant positive correlation between the test scores at the two ages, suggesting that those who were extraverted in college remained so at midlife. The study also showed that those who scored high in extraversion were, as expected, more sociable and outgoing than were those who scored low. The high scorers were also more likely than the low scorers to seek social support when faced with stressful situations in midlife (Von Dras & Siegler, 1997).

In another study, preschool teachers were asked to predict what their students, then ages 3 to 6 years, would be like in 20 years' time. Their expectations, based on observations of the children's behavior, corresponded with the students' scores on the Big Five personality factors. These results suggest that the teachers assumed that preschool behavior would be closely related to adult behavior (Graziano, Jensen- Campbell, & Sullivan-Logan, 1998). This raises the question of whether such expectations will lead teachers and parents to reinforce certain behaviors to strengthen genetically based personality characteristics. In other words, would caregivers treat extraverted children differently from introverted children, thus strengthening each group's differential inherited behavioral tendencies?

Emotional and Behavioral Correlates

In several studies, extraversion was positively related to emotional well being, whereas neuroticism was negatively related to emotional well being. The researchers concluded that people high in extraversion and low in neuroticism were genetically predisposed to emotional stability (Costa & McCrae, 1984; Watson, Clark, McIntyre, & Hamaker, 1992). A study of 100 men and women college students found that those high in extraversion were able to cope with everyday life stress better than those scoring low in extraversion did. Extraverts were also more likely to seek social support to help them deal with stress (Amirkhan, Risinger, & Swickert, 1995). This agrees with the finding reported above that extraverts at midlife were more likely to seek social support in coping with stressful life events. Studies of college students in the United States found that those who scored high in extraversion enjoyed higher status and prominence among their peers than those who scored low in extraversion (Anderson, John, Keltner, & Kring, 2001).

Those high in extraversion rated social situations as positive only if the situation was pleasant, indicating the importance of positive emotions in the factor of extraversion (Lucas & Diener, 2001).

Research with college students found that over a 4-year period, extraverts were likely to experience a greater number of positive events, such as a good grade, a pay raise, or marriage. Students scoring high in neuroticism were more predisposed to negative events such as illness, weight gain, traffic tickets, or rejection by graduate school (Magnus, Diener, Fujita, & Pavot, 1993). A study in Sweden of 320 pairs of identical and fraternal twins reared together and apart confirmed the relationship, for women research participants, between personality variables and desirable life events. Women who scored high on extraversion and openness to experience were significantly more likely to experience positive life events. Women who scored high on

neuroticism were significantly more likely to experience negative life events (Saudino, Pedersen, Lichtenstein, McClearn, & Plomin, 1997).

In another study, persons high in agreeableness and conscientiousness showed greater emotional well-being than persons low in these traits (McCrae & Costa, 1991). Other researchers found that people high in neuroticism were prone to depression, anxiety, and self-blame (Jorm, 1987; Parkes, 1986). More physical illness and psychological distress has been associated with high scores on the neuroticism factor (De Raad, 2000; Larsen & Kasimatis, 1991; Ormel & Wohlfarth, 1991).

A study of 174 male and female patients with chronic renal insufficiency (a kidney disorder), conducted over a 4-year period, found that those who scored higher on neuroticism on the NEO had a mortality rate 37.5 percent higher than those who scored lower on neuroticism (Christensen et al., 2002).

A group of 48 healthy adult males were asked to keep detailed diaries of their problems and moods over an 8-day period. The results showed that men who scored high in neuroticism reported having more frequent daily problems and finding them to be more distressing than did men who scored low in neuroticism (Suls, Green, & Hillis, 1998).

Other research demonstrated that adults who scored low in neuroticism and high in extraversion and conscientiousness were also high in subjective vitality, which the investigators described in terms of energy, enthusiasm, and spirit (Ryan & Frederick, 1997).

People high in openness tend to have a wide range of intellectual interests and to seek challenges. They are more likely to change jobs, try different careers, and expect more varied life experiences than people scoring low in openness (McCrae & Costa, 1985a, 1985b).

Not surprisingly, people high in conscientiousness tend to be reliable, responsible, efficient, and dependable, and usually earn better grades in school than people low in conscientiousness (Goldberg, 1990). A study of more than 300 British university students found that those high in conscientiousness were more organized, self-disciplined, and achievement oriented in terms of planning for future goals (Conner & Abraham, 2001). In research conducted in the workplace, it was found that people who scored high in conscientiousness were more likely than low scorers to set high goals and strive to achieve them, to initiate desirable work behaviors, and to receive high performance ratings. The conscientiousness factor was also shown to be a valid predictor of job performance for professional, police, managerial, sales, and skilled labor jobs (Barrick & Mount, 1996; Barrick, Mount, & Strauss, 1993; Stewart, Carson, & Cardy, 1996).

Research also indicates that high scorers on conscientiousness are likely to be healthier and to live longer. A study of 343 adult smokers showed that those who were more conscientious were less likely to smoke at home than were those low in conscientiousness.

This suggests that the conscientious smokers were more aware of the health risks of smoking indoors (both to themselves and to others living with them) and acted to reduce those risks (Hampson, Andrews, Barckley, Lichtenstein, & Lee, 2000).

Research on 358 diabetic adolescents and young adults showed that those who scored higher in conscientiousness sought more information about managing their condition and were more diligent about self-care than were those lower in conscientiousness (Skinner, Hampson, Fife-Schau, 2002). A study of 366 British university students revealed that those who were more conscientious were far less likely to display hypochondriacal complaints (that is, to believe, and fear, that they were sick) than those low in conscientiousness (Ferguson, 2000).

Longitudinal studies, some investigating the same research participants for nearly 70 years, showed that children who were high scorers on conscientiousness turned out to be physically healthier and to live longer than children who were low scorers (Booth-Kewley & Vickers, 1994; Friedman et al., 1993, 1995; Marshall et al., 1994). A study of 196 college students in Australia found that high scores on conscientiousness were related to greater ego development for men research participants whereas high scores on the factor of openness were related to greater ego development among women (Einstein & Lanning, 1998).

In other work, research participants high in the agreeableness factor were found to be cooperative, helpful, altruistic, honest, and selfless (Digman, 1990; John, 1990). A 25-year study of 194 residents of Finland found that those who were high in agreeableness at age 8 earned better grades in school and exhibited fewer behaviour problems than those low in agreeableness at age 8. As adults 25 years later, the high agreeable types reported less alcoholism and lower levels of depression, had lower arrest records, and showed greater career stability than those low in agreeableness (Laursen, Pulkkinen, & Adams, 2002).

Research on 1,620 people diagnosed with attention-deficit/hyperactivity disorder found that symptoms such as hyperactivity, impulsivity, inattention, and cognitive and behavioral disorganization were significantly lower in those who scored higher in agreeableness than those who scored low (Nigg et al., 2002).

An 18-month study of 132 German university students from the beginning of their first year of college found significant effects of three of the Big Five personality factors on their social relationships. Students scoring high in extraversion made more friends during the 18-month period and were more likely to fall in love than students low in extraversion. Those high in agreeableness experienced less conflict with acquaintances of the opposite sex, and those high in conscientiousness were more likely to maintain contact with parents and siblings. The factor of openness showed no significant effect on social relationships (Asendorpf & Wilpers, 1998).

When 672 college students in the United States were asked to rate the importance they placed on a variety of life goals—for example, marriage, fun-filled activities, and the serious pursuit of a career—it was found that those who desired higher economic, social, and political status scored high in extraversion and low in agreeableness (Roberts & Robins, 2000).

The evidence is clear from studies of a wide range of emotions and behaviours that the five-factor model of personality has a high predictive value. Most research uses the five factors as self-contained entities and not the individual traits of which they are composed (see Table 10.5). Research comparing the predictive value of the five factors and of the traits found that higher

level factors and lower level traits have high predictive validities but that validities of the traits were higher than those of the factors (Paunonen, 1998; Paunonen & Ashton, 2001).

Factor analyses of 14 studies of children, college students, and adults in the United States, Germany, and Hong Kong, including children in the United States of Asian ancestry, suggests the existence of two higher-order factors drawn from the five factor model. Factor *a* incorporates agreeableness, conscientiousness, and emotional stability and includes a constellation of traits that are considered socially desirable in many cultures. Factor *b* includes extraversion and an independent factor designated as “intellect.” Extraversion in this case refers not only to sociability but also to an active, zestful, and venturesome attitude toward life. Intellect refers not to the standard conception of intelligence but rather to creative and divergent thinking and openness to new ideas (Digman, 1997).

Not all psychologists accept McCrae and Costa’s factors. Some researchers have proposed a list of nine personality dimensions (Paunonen & Jackson, 2000).

Others argue that no list of factors can fully describe the complex human personality. And still others agree that there may, indeed, be five major factors but disagree on what they are. Nevertheless, McCrae and Costa’s findings have been replicated and continue to inspire considerable research. They provided an intriguing and well-supported approach to personality and to our understanding of the relative importance of heredity and environment

UNIT IV:

LEARNING AND COGNITIVE APPROACHES

4.1 Pavlov

4.2 Skinner

B. F. Skinner was born in Susquehanna, Pennsylvania, the elder of two sons; his brother died at the age of 16. His parents were hardworking people who instilled in their children clear rules of proper behavior. "I was taught to fear God, the police, and what people will think" (Skinner, 1967, p. 407). His mother never deviated from her strict standards. Her method of control was to say "tut tut." Skinner's grandmother made certain that he understood the punishments of Hell by pointing out the red-hot coals in the parlor stove. Skinner's father contributed to his son's moral education by teaching him the fate that befell criminals. He showed Skinner the county jail and took him to a lecture about life in a notorious New York state prison.

Skinner's autobiography contains many references to the impact of these childhood warnings on his adult behavior. He wrote of visiting a cathedral as an adult and taking care to avoid stepping on the gravestones set in the floor; as a child he had been instructed that such behavior wasn't proper. These and other instances made it clear to Skinner that his adult behaviors were determined by the rewards and punishments (the "reinforcements") he had received as a child. Thus, his system of psychology and his view of people as "complex system[s] behaving in lawful ways" reflected his own early life experiences (Skinner, 1971, p. 202).

Also prophetic of his view of people as machines that operate predictably were the many hours he spent constructing mechanical devices such as wagons, seesaws, carousels, slingshots, model airplanes, and a steam cannon that shot potato and carrot plugs over neighboring houses. Skinner also worked on a perpetual-motion machine, which perpetually failed. His interest in animal behavior also derived from childhood. He made pets of turtles, snakes, toads, lizards, and chipmunks. A flock of performing pigeons at a county fair fascinated him. The pigeons raced onstage, pulled a fire engine up to a burning building, and shoved a ladder against it. One trained pigeon wearing a firefighter's red hat climbed to an upper-story window to rescue a stranded pigeon. Skinner later would train pigeons to play Ping-Pong and to guide a missile to its target.

Finding an Identity

Skinner majored in English at Hamilton College and after graduation expected to become a novelist. Encouraged by favorable comment on his work from the eminent poet Robert Frost, Skinner built a study in the attic of his parents' home in Scranton, Pennsylvania, and sat down to write. The results were disastrous. He read, listened to the radio, played the piano, and built ship models while waiting for inspiration. He considered seeing a psychiatrist, but his father argued that it would be a waste of money. Skinner was 22 years old and apparently a failure at the only thing he wanted to do.

He later referred to that time as his dark year, what Erik Erikson would call an identity crisis. Skinner's occupational identity as a writer, which he carefully constructed during his college years and which Robert Frost reinforced, had collapsed and took with it his sense of self-worth. He left Scranton for New York City's Greenwich Village but found he could not write there either. Worse, in his view, was that several women spurned his proclaimed love for them, leaving him so upset that he branded one woman's initial on his arm, where it remained for years (Skinner, 1983).

Just when Skinner believed he had lost all hope, he discovered an identity that suited him, and to which he would cling for the rest of his life. He decided that since writing had failed him (rather than the other way around), he would study human behaviour by the methods of science rather than the methods of fiction. He read books by Ivan Pavlov and John B. Watson, and chose to become a behaviorist. Thus, his self-image and identity became secure.

Skinner entered Harvard University in 1928 to study psychology. He had never taken a course in the field but earned his Ph.D. in three years. His choice of behaviourism led him to reject the feelings and emotions he had tried to draw on as a writer.

One historian of psychology noted:

[There are] essential differences between a career devoted to writing poetry and fiction and one devoted to promoting the cause of behaviorism. The former requires commitment to such intrapsychic processes as inspiration, intuition, free association, the stream of consciousness, and the participation of the unconscious, as well as considering fantasies and feelings important parts of one's being. The latter denies it all—makes fantasies and feelings, indeed the entire intrapsychic domain, recede into a background of (to use Skinner's favorite term) "pre-scientific" notions, while attention is focused on observable behavior and the operations necessary to record, predict, and control it effectively. (Mindess, 1988, p. 105)

Psychic processes appear in Skinner's work only as objects of derision. With postdoctoral fellowships, Skinner stayed at Harvard until 1936. He then taught at the University of Minnesota and Indiana University, returning to Harvard in 1947. In his 40s, Skinner experienced a period of depression, which he resolved by returning to his failed identity as a writer. Skinner projected his emotional and intellectual discontent onto the protagonist of a novel, *Walden Two*, letting the character vent his personal and professional frustrations (Skinner, 1948). The book, which is still in print, has sold more than 2 million copies. It describes a society in which all aspects of life are controlled by positive reinforcement, which is the basic principle of Skinner's system of psychology.

Well into his 80s, Skinner continued to work with enthusiasm and dedication. He regulated his habits, recording his daily work output and the average time spent per published word (2 minutes). Thus, he became a living example of his definition of humans as complex systems behaving in lawful ways. He once commented to a friend that he was cited in the psychology literature more frequently than Freud was. When asked if that had been his goal, Skinner said, "I thought I might make it" (quoted in Bjork, 1993, p. 214).

Reinforcement: The Basis of Behavior

Skinner's approach to behavior, simple in concept, is based on thousands of hours of well-controlled research. His fundamental idea is that behavior can be controlled by its consequences, that is, by what follows the behavior. Skinner believed that an animal or a human could be trained to perform virtually any act and that the type of reinforcement that followed the behavior would be responsible for determining it.

Thus, whoever controls the reinforcers has the power to control human behavior, in the way an experimenter can control the behavior of a laboratory rat.

Respondent Behavior

Skinner distinguished between two kinds of behavior: respondent behavior and operant behavior. **Respondent behavior** involves a response made to or elicited by a specific stimulus. A reflexive behavior such as a knee jerk is an example of respondent behavior. A stimulus is applied (a tap on the knee) and the response occurs (the leg jerks). This behavior is unlearned. It occurs automatically and involuntarily. We do not have to be trained or conditioned to make the appropriate response.

At a higher level is respondent behavior that is learned. This learning, called conditioning, involves the substitution of one stimulus for another. The concept originated in the work of the Russian physiologist Ivan Pavlov in the early 1900s. Later, Pavlov's ideas on conditioning were adopted by John B. Watson as the basic research method for behaviorism.

Working with dogs, Pavlov discovered that they would salivate to neutral stimuli such as the sound of their keeper's footsteps. Previously, the salivation response had been elicited by only one stimulus, the sight of food. Intrigued by this observation, Pavlov studied the phenomenon systematically. He sounded a bell shortly before feeding a dog. At first, the dog salivated only in response to the food and not to the bell because the bell had no meaning. However, after a number of pairings of the bell followed by the food, the dog began to salivate at the sound of the bell. Thus, the dog had been conditioned, or trained, to respond to the bell. The dog's response shifted from the food to what previously had been a neutral stimulus.

This classic experiment by Pavlov demonstrated the importance of **reinforcement**. The dogs would not learn to respond to the bell unless they were rewarded for doing so. In this example, the reward was food. Pavlov then formulated a fundamental law of learning: A conditioned response cannot be established in the absence of reinforcement. The act of reinforcing a response strengthens it and increases the likelihood that the response will be repeated.

However, an established conditioned response will not be maintained in the absence of reinforcement. Consider a dog conditioned to respond to the sound of a bell.

Every time the bell rings, the dog salivates. Then the experimenter stops presenting food after sounding the bell. The dog hears the bell and nothing happens—no more food, no more

reinforcement or reward. With successive ringings of the bell, the dog's salivary response decreases in frequency and intensity until no response occurs at all. This process is called **extinction**. The response has been wiped out or extinguished because reinforcers or rewards for it were no longer provided.

Operant Behavior

Respondent behavior depends on reinforcement and is related directly to a physical stimulus. Every response is elicited by a specific stimulus. To Skinner, respondent behavior was less important than **operant behavior**. We are conditioned to respond directly to many stimuli in our environment, but not all behavior can be accounted for in this way. Much human behavior appears to be spontaneous and cannot be traced directly to a specific stimulus. Such behavior is emitted rather than elicited by a stimulus. It involves acting in a way that appears to be voluntary rather than reacting involuntarily to a stimulus to which we have been conditioned. The nature and frequency of operant behavior will be determined or modified by the reinforcement that follows the behavior. Respondent behavior has no effect on the environment. In Pavlov's experiment, the dog's salivary response to the ringing bell did nothing to change the bell or the reinforcer (the food) that followed. In contrast, operant behavior operates on the environment and, as a result, changes it.

Operant Conditioning and the Skinner Box

To illustrate the **operant-conditioning** process, let us follow the progress of a rat in Skinner's operant-conditioning apparatus, also known as the Skinner box (see Figure). When a food-deprived rat is placed in the box, its behavior at first is spontaneous and random. The rat is active, sniffing, poking, and exploring its environment. These behaviors are emitted, not elicited; in other words, the rat is not responding to any specific stimulus in its environment.

At some time during this activity, the rat will depress a lever or bar located on one wall of the Skinner box, causing a food pellet to drop into a trough. The rat's behaviour (pressing the lever) has operated on the environment and, as a result, has changed it. How? The environment now includes a food pellet. The food is a reinforce for the behavior of depressing the bar. The rat begins to press the bar more often.

What happens? It receives more food—more reinforcement—and so presses the bar even more frequently. The rat's behavior is now under the control of the reinforcers. Its actions in the box are less random and spontaneous because it is spending most of its time pressing the bar, and eating.

If we put the rat back in the box the next day, we can predict its behavior and we can control its bar-pressing actions by presenting or withholding the reinforcers or by presenting them at a different rate. Withholding the food extinguishes operant behaviour in the same way that it extinguishes respondent behavior. If the unreinforced behaviour no longer works, in that it no longer brings a reward, after a while it will stop. Thus, the person who controls the reinforcers controls the research participants' behavior.

Skinner believed that most human and animal behavior is learned through operant conditioning. Consider how babies learn. An infant initially displays random, spontaneous behaviors, only some of which are reinforced (rewarded with food or hugs or toys, for example) by parents, siblings, or caregivers. As the infant grows, the positively reinforced behaviors, those of which the parents approve, will persist, whereas those of which the parents disapprove will be extinguished or discontinued. The concept is the same with the rat in the Skinner box. Behaviors that work (pressing the bar to obtain food) are displayed frequently, and behaviors that do not work are not repeated. Thus, the organism's behavior operates on the environment. And in turn, the environment, in the form of reinforcement, operates on the organism's behavior.

You can see how powerful reinforcement can be in determining and controlling behavior. Skinner wrote, "Operant conditioning shapes behavior as a sculptor shapes a lump of clay" (1953, p. 91). If that lump of clay, that organism, needs the reinforcer badly enough, there is virtually no limit to how its behavior can be shaped—by an experimenter with a food pellet, a puppy owner with a dog biscuit, a mother with a smile, a boss with a pat on the back, or a government with a promise.

From infancy on, we display many behaviors, and those that are reinforced will strengthen and form patterns. This is how Skinner conceived of personality, as a pattern or collection of operant behaviors. What other psychologists called neurotic or abnormal behavior was nothing more mysterious to Skinner than the continued performance of undesirable behaviors that somehow have been reinforced.

Having demonstrated how behavior could be modified by continuous reinforcement—that is, by presenting a reinforcer after every response—Skinner decided to consider how behavior would change if he varied the rate at which it was reinforced.

Schedules of Reinforcement

Skinner pointed out that in everyday life outside the psychology laboratory, our behaviour is rarely reinforced every time it occurs. A baby is not picked up and cuddled every time he or she cries. Baseball superstars do not hit a home run every time at bat. The bagger in the supermarket does not receive a tip for each bag packed. And your favorite singing group doesn't win a Grammy for every album it records. You can think of many more examples of behaviors that persist even though they are reinforced only occasionally.

After observing that his rats continued to press the bar at a fairly constant rate even when they were not being reinforced for each response, Skinner decided to investigate different **reinforcement schedules** to determine their effectiveness in controlling behavior. Among the rates of reinforcement he tested are the following.

- Fixed interval
- Fixed ratio
- Variable interval
- Variable ratio

A *fixed-interval schedule of reinforcement* means that the reinforcer is presented following the first response that occurs after a fixed time interval has elapsed. That interval might be 1 minute, 3 minutes, or any other fixed period of time. The timing of the reinforcement has nothing to do with the number of responses. Whether the rat responds 3 times or 20 times a minute during the fixed time interval, the reinforce still arrives only after the passage of a given time period and the emission of the correct response.

Many situations operate in accordance with the fixed-interval reinforcement schedule. If your professor gives a midterm and a final examination, he or she is using a fixed-interval schedule. A job in which your salary is paid once a week or once a month operates on the fixed-interval schedule. You are not paid according to the number of items you produce or the number of sales you make (the number of responses) but by the number of hours, days, or weeks that elapse.

Skinner's research showed that the shorter the interval between presentations of the reinforcer, the greater the frequency of response. The response rate declined as the interval between reinforcements lengthened. How frequently reinforcers appeared also affected how quickly the response could be extinguished. The response stopped sooner if the rat had been reinforced continuously and the reinforcement was then stopped than if the rat had been reinforced intermittently.

In the *fixed-ratio schedule of reinforcement*, reinforcers are given only after the organism has made a specified number of responses. For example, the experimenter could reinforce after every 10th or 20th response. In this schedule, unlike the fixed interval schedule, the presentation of reinforcers depends on how often the subject responds. The rat will not receive a food pellet until it emits the required number of responses. This reinforcement schedule brings about a faster rate of responding than does the fixed-interval schedule.

The higher response rate for the fixed-ratio reinforcement schedule also applies to humans. In a job in which your pay is determined on a piece-rate basis, how much you earn depends on how much you produce. The more items you produce, the higher your pay. Your reward is based directly on your response rate. The same is true for a salesperson working on commission. Income depends on the number of products sold; the more sold, the more earned. In contrast, a salesperson on a weekly salary earns the same amount each week regardless of the number of items sold.

But everyday life doesn't always permit a fixed-interval or fixed-ratio reinforcement schedule. Sometimes reinforcers are presented on a variable basis. In the *variable-interval schedule of reinforcement*, the reinforcer might appear after 2 hours in the first instance, after 1 1/2 hours the next time, and after 2 hours and 15 minutes the third time. A person who spends the day fishing might be rewarded, if at all, on a variable-interval basis. The reinforcement schedule is determined by the random appearance of fish nibbling at the bait.

A *variable-ratio schedule of reinforcement* is based on an average number of responses between reinforcers, but there is great variability around that average.

Skinner found that the variable-ratio schedule is effective in bringing about high and stable response rates, as the people who operate gambling casinos can happily attest. Slot machines, roulette wheels, horse races, and the state lottery games pay on a variable-ratio reinforcement schedule, an extremely effective means of controlling behavior. Variable reinforcement schedules result in enduring response behaviours that tend to resist extinction. Most everyday learning occurs as a result of variable-interval or variable-ratio reinforcement schedules.

Skinner's research on reinforcement schedules provides an effective technique for controlling, modifying, and shaping behavior. If you are in charge of rats, salespeople, or assembly-line workers, or are trying to train your pet or your child, these operant conditioning techniques can be useful in bringing about the behaviors you desire.

Successive Approximation: The Shaping of Behavior

In Skinner's original operant-conditioning experiment, the operant behavior (pressing the lever) is a simple behavior that a laboratory rat would be expected to display eventually in the course of exploring its environment. Thus, the chance is high that such a behavior will occur, assuming the experimenter has sufficient patience. It is obvious, however, that animals and humans demonstrate many more complex operant behaviors that have a much lower probability of occurrence in the normal course of events. How are these complex behaviors learned? How can an experimenter or a parent reinforce and condition a pigeon or a child to perform behaviors that are not likely to occur spontaneously?

Skinner answered these questions with the method of successive approximation, or *shaping* (Skinner, 1953). He trained a pigeon in a very short time to peck at a specific spot in its cage. The probability that the pigeon on its own would peck at that precise spot was low. At first, the pigeon was reinforced with food when it merely turned toward the designated spot. Then reinforcement was withheld until the pigeon made some movement, however slight, toward the spot.

Next, reinforcement was given only for movements that brought the pigeon closer to the spot. After that, the pigeon was reinforced only when it thrust its head toward the spot. Finally, the pigeon was reinforced only when its beak touched the spot. Although this sounds like a time-consuming process, Skinner conditioned pigeons in fewer than 3 minutes.

The experimental procedure itself explains the term *successive approximation*. The organism is reinforced as its behavior comes in successive, or consecutive, stages to approximate the final behavior desired. Skinner suggested that this is how children learn the complex behavior of speaking. Infants spontaneously emit meaningless sounds, which parents reinforce by smiling, laughing, and talking. After a while, parents reinforce this babbling in different ways, providing stronger reinforcers for sounds that approximate words. As the process continues, parental reinforcement becomes more restricted, given only for appropriate usage and pronunciation. Thus, the complex behavior of acquiring language skills is shaped by providing differential reinforcement in stages.

Skinner once shaped the behavior of the psychoanalyst Erich Fromm, whose comments during a lecture annoyed him.

Superstitious Behavior

We know that life is not always as orderly or well controlled as events in the psychology laboratory. Sometimes we are reinforced accidentally after we have displayed some behavior. As a result, that behavior, which did not lead to or cause the reinforcement, may be repeated in a similar situation.

Consider an example from football. An offensive lineman for the Tampa Bay (FL) Buccaneers was having a terrible season early in his career. He asked his roommate to switch beds so that he could sleep closer to the bathroom. Immediately thereafter, his playing improved. For the rest of his career, he insisted on the bed nearest the bathroom door in every motel in which the team stayed. And the NFL kicker who hugged the goal posts before each game? He had done it once before making a successful kick, so because it had worked then, he continued the practice.

He told a reporter that he wanted the goal posts to know he loved them and to implore them to stay still when he kicked.

Skinner called this phenomenon **superstitious behavior** and demonstrated it in the laboratory. A hungry pigeon was placed in the operant-conditioning apparatus and reinforced every 15 seconds on a fixed-interval schedule. It is likely that the pigeon would be doing something, displaying some behavior or activity, when the reinforcing food pellet was presented. It might be turning, raising its head, strutting, hopping, or standing still. Whatever behavior was being emitted at the moment of reward would be reinforced.

Skinner found that a single reinforcement was powerful enough to lead the pigeon to repeat the accidentally reinforced behavior more frequently for a while, which increased the probability that another food pellet would appear while the same behavior was being shown. And with short intervals between reinforcers, superstitious behaviors are learned quickly. Like the football players in the examples above, the superstitious behaviors offered by the pigeon have no functional relationship to the reinforcers. The connection is unintentional. In humans, such behaviors may persist throughout life and require only occasional reinforcement to sustain them.

The Self-Control of Behavior

According to Skinner, behavior is controlled and modified by variables that are external to the organism. There is nothing inside us—no process, drive, or other internal activity—that determines behavior. However, although these external stimuli and reinforcers are responsible for shaping and controlling behavior, we have the ability to use what Skinner called **self-control**, which he described as acting to alter the impact of external events. Skinner did not mean acting under the control of some mysterious “self.” He suggested that to some extent we can control the external variables that determine our behavior.

Skinner proposed several self-control techniques. In *stimulus avoidance*, for example, if the music from your roommate's stereo annoys you and interferes with your studying, you could leave the room and go to the library, removing yourself from an external variable that affects your behavior. By avoiding a person or situation that makes you angry, you reduce the control that person or situation has over your behavior. Similarly, alcoholics can act to avoid a stimulus that controls their behaviour by not allowing liquor to be kept in their home.

Through the technique of *self-administered satiation*, we exert control to cure ourselves of bad habits by overdoing the behavior. Smokers who want to quit can chain-smoke for a period of time, inhaling until they become so disgusted, uncomfortable, or ill that they quit. This technique has been successful in formal therapeutic programs designed to eliminate smoking. The *aversive stimulation technique* of self-control involves unpleasant or repugnant consequences. Obese people who want to lose weight declare their intention to their friends. If they do not keep their resolution, they face the unpleasant consequences of personal failure, embarrassment, and criticism. In *self-reinforcement*, we reward ourselves for displaying good or desirable behaviors.

A teenager who agrees to strive for a certain grade point average or to care for a younger brother or sister might reward himself or herself by buying concert tickets or new clothes.

To Skinner, then, the crucial point is that external variables shape and control behavior. But sometimes through our own actions we can modify the effects of these external forces.

Applications of Operant Conditioning

Psychologists have applied Skinner's operant conditioning techniques to modify human behavior in clinical, business, and educational settings. Behavior modification has been successful with children and adults, with the mentally healthy and the mentally disturbed, and with individual as well as group behaviors.

Token Economy Programs

The classic application is the **token economy**. In the pioneering study, a ward of more than 40 psychotic female patients in a state mental institution was treated as a giant Skinner box (Ayllon & Azrin, 1968). The patients could no longer be helped by conventional treatments. They had been institutionalized for a long time and were unable to care for themselves.

In this setting, the patients were offered opportunities to work at jobs, usually performed by paid hospital attendants, for which they would receive tokens. The tokens functioned like money, hence the term *token economy*. Like people outside the institution, the patients could buy goods and privileges to improve the quality of life.

With a certain number of tokens, they could purchase candy, cigarettes, lipstick, gloves, and newspapers. By paying with tokens, they could attend a movie on the ward, walk around the hospital grounds, or upgrade to a better room. The most expensive privileges, requiring 100 tokens, were an escorted trip into town and a private meeting with a social worker. A private meeting with a psychologist was worth only 20 tokens.

What kinds of behaviors did the patients have to emit to be reinforced and receive tokens? If they bathed at the time designated, brushed their teeth, made their bed, combed their hair, and dressed properly, they earned a token for each activity. They would be paid up to 10 tokens for each work period in the hospital kitchen or laundry or for helping to clean the ward, run errands, or take other patients for walks.

The tasks may seem simple to us, but before the token economy program began, these patients were considered helpless and aimless.

The conditioning worked dramatically. Not only did the patients groom themselves and clean their surroundings, but they also busied themselves at a variety of tasks. They interacted socially with one another and with the staff and assumed some responsibility for patient care. Their self-esteem improved markedly, and they became less dependent.

A note of caution about these impressive results: Token economies have been found to be effective only within the setting in which they are implemented. In general, the modified behaviors do not carry over to life outside the institution. Reinforcement must be continued if the desired behavior changes are to persist. When tokens are no longer provided, reinforced behaviors usually revert to their original state (Kazdin & Bootzin, 1972; Repucci & Saunders, 1974). However, if caregivers are trained to reward desirable behaviors with reinforcers such as smiles, praise, hugs, and other signs of affection, then behaviors conditioned in the institutional token-economy situation are more likely to be continued in the home setting (Kazdin, 1989).

Behavior Modification Programs

Operant-conditioning techniques have been applied to problems in business and industry. Behavior modification programs at major manufacturers, financial institutions, and government agencies have been shown to reduce absenteeism, lateness, and abuse of sick-leave privileges, and to lead to improvements in job performance and safety.

The techniques can also be used to teach low-level job skills. Reinforcers used in business include pay, job security, recognition from supervisors, perks and status within the company, and the opportunity for personal growth. No attempt is made to deal with any alleged anxieties, repressed traumas, or unconscious motivating forces.

The focus is on changing overt behavior, defining the nature of the appropriate reinforcers, and determining their optimal rate of presentation to modify behavior.

Punishment and Negative Reinforcement

Most operant-conditioning applications involve positive reinforcement rather than **punishment**. The token-economy patients were not punished for failing to behave appropriately. Instead, they were reinforced when their behavior changed in positive ways. Skinner said that punishment was ineffective in changing behavior from undesirable to desirable or from abnormal to normal.

Positive reinforcement administered for desirable behaviors is much more effective than punishment.

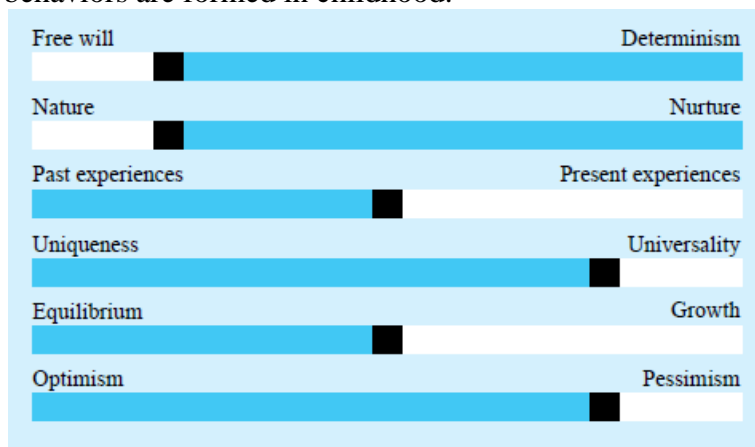
What's wrong with punishments is that they work immediately, but give no long-term results. The responses to punishment are either the urge to escape, to counterattack, or a stubborn apathy. These are the bad effects you get in prisons or schools, or wherever punishments are used. (quoted in Goleman, 1987)

Negative reinforcement is not the same as punishment. A negative reinforcer is an aversive or noxious stimulus, the removal of which is rewarding. In the laboratory or classroom, an operant-conditioning situation can be established in which the unpleasant stimulus (such as a loud noise or an electric shock) will continue until the subject emits the desired response. As with positive reinforcement, the environment changes as a consequence of the behavior; in this case, the noxious stimulus will disappear.

We can see examples of negative reinforcement in everyday situations. A person may stop smoking to avoid the aversive stimulus of a nagging spouse or colleague. The aversive stimulus (the nagging) should cease when the desirable behavior (not lighting a cigarette in the home or office) is displayed. Skinner opposed using noxious stimuli to modify behavior, noting that the consequences were not as predictable as with positive reinforcement. Also, negative reinforcement does not always work whereas positive reinforcement is more consistently effective.

Questions About Human Nature

Skinner's position is clear on the nature–nurture issue (see Figure). People are primarily products of learning, shaped more by external variables than genetic factors. We may infer that childhood experiences are more important in Skinner's view than are later experiences because our basic behaviors are formed in childhood.



This does not mean that behavior cannot change in adulthood. What is learned in childhood can be modified, and new behavior patterns can be acquired at any age. The success of behaviour modification programs verifies that assertion. Skinner's belief that behavior is shaped by learning also leads us to conclude that each person is unique. Because we are shaped by

experience—and we all have different experiences, particularly in childhood—no two people will behave in precisely the same way.

Skinner did not address the issue of an ultimate and necessary goal. He made no reference to overcoming inferiority, reducing anxiety, or striving for self-actualization. Such motives assume internal, subjective states, which Skinner did not accept. Any indication of a life goal in Skinner's work seems to be societal, not individual. In his novel *Walden Two* and in other writings, he discussed his notion of the ideal human society. He stated that individual behavior must be directed toward the type of society that has the greatest chance of survival.

On the issue of free will versus determinism, people function like machines, in lawful, orderly, predetermined ways. Skinner rejected all suggestions of an inner being or autonomous self that determines a course of action or chooses to act freely and spontaneously.

From Skinner's scholarly writings to his popular novel about a utopian society based on operant conditioning his message is the same: Behavior is controlled by reinforcers. In a sense, this means that it is pointless to blame or punish people for their actions. A dictator who orders the mass killing of thousands of people, or a serial killer who murders a dozen, can no more be held responsible for their actions than can a driverless car that plunges down a hill. Both operate in lawful, predictable ways, controlled by external variables.

Are we left with a pessimistic conception of people as helpless and passive robots, unable to play an active role in determining their behavior? That is not Skinner's complete view. Despite his belief that behavior is controlled by external stimuli and reinforcers, we are certainly not victims. Although controlled by our environment, we are responsible for designing that environment. Our buildings, cities, consumer goods, factories, and government institutions are the result of human fabrication. So, too, are our social systems, languages, customs, and recreations. We constantly change our environment, often to our advantage. When we do so, we are acting as both controller and controlled. We design the controlling culture, and we are products of that culture.

The world may impose limits on our freedom to bring about change. In making changes, we will be guided and sometimes restricted by situations that provided positive reinforcement for us in the past. In acting to change our environment, we will seek greater opportunities for positive reinforcement and in the process modify our own behavior. Skinner left us with a paradox, an image of person-as-machine capable of altering the environmental conditions that guide the machine's behavior.

Assessment in Skinner's Theory

Skinner did not use the typical assessment techniques favored by other theorists. There was no place in his work for free association, dream analysis, or projective techniques. Because he was not dealing directly with personality, he really had no interest in assessing it. He did, however, assess behavior. Note that in the application of his behavior modification techniques, it is necessary first to assess specific behaviors, both desirable and undesirable. Also to be assessed are the environmental factors that serve as reinforcers and that can be manipulated to alter behavior. No behaviour can be modified appropriately without such prior assessment. Skinner's

approach to assessing behavior is called **functional analysis** and it involves three aspects of behavior.

- The frequency of the behavior
- The situation in which the behavior occurs
- The reinforcement associated with the behaviour

Unless these factors have been evaluated, it is not possible to plan and implement a behavior modification program.

Consider a functional analysis for cigarette smokers who want to break the smoking habit. The smokers are asked to keep an accurate record of the number of cigarettes they smoke each day and the situations in which the cigarettes are smoked. Does smoking occur in a particular place or at a certain time? In the presence of others or alone? After meals or while driving? And what are the reinforcers? Most smokers smoke more frequently in the presence of certain stimuli. Identifying these stimuli is necessary because modifying them should lead to a change in the smoking behavior.

Direct Observation of Behavior

Three approaches to assessing behavior are direct observation, self-reports, and physiological measurements. Many behaviors can be assessed through direct observation. Usually, two or more people conduct the observation to assure accuracy and reliability. For example, in a classic report of a behavior modification situation, a woman sought treatment for her 4-year-old son whose behavior was considered unruly (Hawkins, Peterson, Schweid, & Bijou, 1966). Two psychologists observed the mother and child in their home to evaluate the nature and frequency of the child's undesirable behaviors, when and where they occurred, and the reinforcers the child received for the behaviors.

Nine undesirable behaviors were identified, including kicking, throwing things, biting, and pushing a sibling. The psychologists observed that the mother reinforced the child by giving him toys or food when he behaved badly. Her intention was to get him to stop misbehaving. Instead, she was rewarding him and thus reinforcing the misbehavior. The direct observation assessment lasted 16 hours, but without it the psychologists would not have known exactly which undesirable behaviors to try to eliminate or what reinforcers the child expected.

With a comprehensive direct-observation program, it is possible to plan a course of behavior modification. In this case, the psychologists instructed the mother to use attention and approval as reinforcers when the child behaved in positive ways and never to reward him when he displayed one of the nine observed undesirable behaviors.

The frequency of the undesirable behaviors, as determined in the direct observation assessment, provided a baseline against which to compare behavior during and after treatment.

Self-Reports of Behavior

Another approach to assessing behavior is the self-report technique carried out through interviews and questionnaires. The person observes his or her own behaviour and reports on it. For example, a questionnaire may assess the extent of a person's fear in situations such as driving a car, going to the dentist, or speaking in public.

Questionnaires for assessing behavior are similar in format to self-report inventories that assess personality. The difference lies in the way they are interpreted, as described by the **sign-versus-sample approach**. In the sign approach, which is used to assess *personality*, the psychologist infers the existence of character types, traits, or unconscious conflicts from the individual's responses. For example, if a person indicates that he or she is afraid of being in an elevator, this fear can be interpreted as a *sign*, or an indirect symptom, of some underlying motive or conflict.

In the sample approach, which is used to assess *behavior*, questionnaire responses are interpreted as directly indicative of a *sample* of behavior. No attempt is made to draw inferences or conclusions about the person's character or personality traits. The behavior itself and the stimulus associated with it are the important things. There is no concern with subjective motives, childhood experiences, or other mental processes.

Physiological Measurements of Behavior

Physiological assessments of behavior include heart rate, muscle tension, and brain waves. By recording such measurements, it is possible to evaluate the physiological effects of various stimuli. The measures can also be used to confirm the accuracy of information obtained by other assessment methods. For example, a person who is too embarrassed to reveal in an interview or on a questionnaire a fear of being in an elevator might exhibit a change in heart rate or muscle tension when asked in general about elevators.

Whatever assessment technique is chosen to assess behavior in different stimulus situations, the focus remains on what people do, not on what might have motivated them to do it. The ultimate goal is to modify behavior, not to change personality.

Research in Skinner's Theory

You can see that Skinner's assessment methods differ radically from those used by other theorists we have discussed. His research methods also diverged from mainstream experimental psychology. The usual procedure is to study large groups of animal or human research participants and to statistically compare their average responses. In contrast, Skinner preferred the intensive study of a single subject. He argued that data on the average performance of groups is of little value in dealing with a particular case. A science that deals with averages provides little information to help in understanding the unique individual.

Skinner believed that valid and replicable results could be obtained without statistical analysis, as long as sufficient data were collected from a single subject under well-controlled experimental conditions. The use of large groups of research participants forced the experimenter to deal with

average behavior. The resulting data could not reflect individual response behavior and individual differences in behavior.

Thus, Skinner favored the idiographic rather than the nomothetic approach. Skinner's single-subject experiments follow the **reversal experimental design**, which proceeds in four stages.

The first stage involves establishing a *baseline*. The subject's behavior (the dependent variable) is observed to determine the normal rate of response before beginning the experimental treatment.

The second stage is the *conditioning*, or experimental, stage, when the independent variable is introduced. If this variable affects behavior, it will produce a notable change from the subject's baseline response rate.

The third stage, called *reversal*, determines whether some factor other than the independent variable is responsible for the observed behavior change. During this stage, the independent variable is no longer applied. If the behavior returns to its baseline rate, then the researcher can conclude that the independent variable was responsible for the difference observed during the conditioning stage. If the behaviour does not return to the baseline rate, then some factor other than the independent variable affected the behavior.

The baseline, conditioning, and reversal stages are sufficient for most laboratory experiments. When the procedure is applied to behavior modification, a *reconditioning* stage is added. The independent variable is reintroduced, assuming it had been effective in changing behavior. Without the fourth stage, research participants in behavior modification programs would remain in reversal with behavior at their baseline level, unchanged by a treatment shown to be effective. It would be unethical not to restore the effective treatment.

Skinner and his followers conducted thousands of operant-conditioning experiments on topics such as reinforcement schedules, language acquisition, behaviour shaping, superstitious behavior, and behavior modification. The results have been highly supportive of Skinner's ideas.

Reflections on Skinner's Theory

Skinner's approach has been criticized on several points. Those who oppose determinism find much to dislike in Skinner's views. The humanistic psychologists, who believe that people are more complex than machines or rats or pigeons, object to Skinner's image of human nature. They argue that the exclusive emphasis on overt behaviour ignores uniquely human qualities such as conscious free will. There has been criticism of the type of subject and the simplicity of the situations in Skinner's experiments.

He made assertions and predictions about human behavior and society—about social, economic, religious, and cultural issues—with considerable confidence.

But can we extrapolate from a pigeon pecking at a disc to a person functioning in the real world? The gap seems too vast to permit broad generalizations. Many aspects of human behavior cannot be reduced meaningfully to the level at which Skinner conducted his research.

Skinner's belief that all behaviors are learned was challenged by a former student. More than 6,000 animals of 38 species were conditioned to perform various behaviours for television commercials and tourist attractions. The animals included pigs, raccoons, chickens, hamsters, porpoises, whales, and cows. The animals displayed a tendency toward **instinctive drift** by substituting instinctive behaviors for the behaviors that had been reinforced, even when the instinctive behaviors interfered with receiving food.

In one example, pigs and raccoons were conditioned to pick up a coin, carry it some distance, and deposit it in a toy bank (a piggy bank, of course). When the animals had deposited a certain number of coins, they were given food as a reinforcer. They learned the desired behaviors quickly, but after having performed the sequence nicely for some time, they began to engage in undesirable behaviors, at least from the viewpoint of the trainers. Pigs would stop on their way [to the bank], bury the coin in the sand, and take it out with their snout; raccoons would spend a lot of time handling the coin, with their well-known washing-like movements. This was at first amusing, but eventually it became time-consuming and would make the whole show appear very imperfect to the spectator. Commercially, it was a disaster. (Richelle, 1993, p. 68)

What had happened was that instinctive behavior—such as the pigs' rooting in the dirt and the raccoons' rubbing their paws as if washing their hands—came to take precedence over the learned behavior, even though it meant a delay in receiving the reinforcement (the food). The trainers published an article on the phenomenon and with Skinner's encouragement called it "The Misbehavior of Organisms" (Breland & Breland, 1961). This was a parody of the title of Skinner's groundbreaking book, *The Behavior of Organisms* (1938).

Skinner ignored most of the criticism his work received. He told an interviewer about one critic's book review, "I read a bit of it and saw that he missed the point. . . . There are better things to do with my time than clear up their misunderstandings" (quoted in Rice, 1968). When asked how he dealt with being misunderstood so frequently, he said, "I find that I need to be understood only three or four times a year" (quoted in Blackman, 1995, p. 126).

Skinner was a potent force in 20th-century American psychology. He shaped the field perhaps more than any other individual. The *Journal of the Experimental Analysis of Behavior*, begun in 1958, publishes research on the behavior of individual research participants. In 1968, the *Journal of Applied Behavior Analysis* was established as an outlet for work on behavior modification techniques.

The American Psychological Foundation awarded Skinner its Gold Medal, and the American Psychological Association gave him the Distinguished Scientific Contribution Award (1958). The citation reads: "Few American psychologists have had so profound an impact on the development of psychology and on promising younger psychologists." Skinner's first book on behaviorism, *The Behavior of Organisms: An Experimental Analysis* (Skinner, 1938), was described as one of the few books to truly change the nature of the field (Thompson, 1988). Skinner also received the U.S. National Medal of Science and appeared on the cover of *Time*, headlined as the world's most famous American psychologist. His controversial 1971 book, *Beyond Freedom and Dignity*, became a best-seller and made him a celebrity.

Skinner was, for a short period, the hottest item on national and big-city talk shows. . . . Within a month, millions of Americans had read or heard about B. F. Skinner and *Beyond Freedom and Dignity*. He was “completely swamped” by mail, telephone calls, and visits. . . . Strangers often asked to shake his hand in restaurants. He had, as one writer noted, “acquired the celebrity of a movie or TV star.” (Bjork, 1993, p. 192)

Although Skinner’s radical behaviorist position continues to be applied in laboratory, clinical, and organizational settings, its dominance has been challenged by the cognitive movement in psychology, which began in the 1960s. Skinner conceded that his form of psychology lost ground to the cognitive approach. Other psychologists agreed, noting that Skinnerian behaviorism had “fallen from favor among the majority of active workers in the field [and was] often referred to in the past tense” (Baars, 1986, pp. viii, 1). Despite the inroads of cognitive psychology, however, Skinner’s position remains influential in many areas, from classrooms to assembly lines, from Skinner boxes to mental institutions. Skinner believed that with operant conditioning he offered a technique to improve human nature and the societies people design.

4.3 Dollard and Miller

4.4 Bandura

Bandura was born in the province of Alberta, Canada. During the summer following his graduation from high school, he took a construction job in the wilderness of the Yukon Territory, filling holes in the Alaska Highway. It was a fascinating experience for a bright, inquisitive young person. Finding himself in the midst of a curious collection of characters, most of whom had fled creditors, alimony, and probation officers, Bandura quickly developed a keen appreciation for the psychopathology of everyday life, which seemed to blossom in the austere tundra. (Distinguished Scientific Contribution Award, 1981, p. 28)

He attended the University of British Columbia in Vancouver as an undergraduate and took a course in psychology, only out of expediency. The carpool in which he commuted to the campus included engineering and pre-med students, all of whom had early-morning classes. Psychology was offered in that time period, so Bandura enrolled in the course. He found the material fascinating. He pursued his studies in the field, earning his Ph.D. in 1952 from the University of Iowa. After a year at the Wichita, Kansas, Guidance Center, he joined the faculty of Stanford University and has compiled an extensive record of publications. In 1973, he was elected president of the American Psychological Association and in 1980 received its Distinguished Scientific Contribution Award.

Bandura’s sense of humor has often been directed at himself. When asked whether he walked to his office or drove his car, he said, “Both, sometimes in the same day.” Having driven to work, he would be so absorbed in his ideas that he would absentmindedly walk home, leaving the car in the university parking lot. He once led a group of psychologists to New Orleans to investigate the city’s facilities for an APA convention. Colleagues noted, “For a week, all we did was follow Al around and eat shrimp jambalaya” (Kiester & Cudhea, 1974, p. 27). Perhaps the

accompanying psychologists received both direct and vicarious reinforcement for modeling their behavior after Bandura's.

Modeling: The Basis of Observational Learning

Bandura's basic idea is that learning can occur through observation or example rather than solely by direct reinforcement. Bandura does not deny the importance of direct reinforcement as a way to influence behavior, but he challenges the notion that behavior can be learned or changed only through direct reinforcement. He argues that operant conditioning, in which trial-and-error behavior continues until the person happens upon the correct response, is an inefficient and potentially dangerous way to learn skills such as swimming or driving. A person could drown or crash before finding the correct sequence of behaviors that brings positive reinforcement.

To Bandura, most human behavior is learned through example, either intentionally or accidentally. We learn by observing other people and patterning our behavior after theirs.

Bobo Doll Studies

Through **modeling**, by observing the behavior of a model and repeating the behaviour ourselves, it is possible to acquire responses that we have never performed or displayed previously and to strengthen or weaken existing responses. Bandura's now-classic demonstration of modeling involves the Bobo doll, an inflatable plastic figure 3 to 4 feet tall (Bandura, Ross, & Ross, 1963). The research participants in the initial studies were preschool children who watched an adult hit and kick Bobo. While attacking the doll, the adult model shouted, "Sock him in the nose!" and "Throw him in the air!" When the children were left alone with the doll, they modeled their behavior after the example they had just witnessed. Their behavior was compared with that of a control group of children who had not seen the model attack the Bobo doll. The experimental group was found to be twice as aggressive as the control group.

The intensity of the aggressive behavior remained the same in the experimental research participants whether the model was seen live, on television, or as a cartoon character. The effect of the model in all three media was to elicit aggressive behavior, actions that were not displayed with the same strength by children who had not observed the models.

Other Modeling Studies

In additional research on the impact of modeling on learning, Bandura compared the behavior of parents of two groups of children (Bandura & Walters, 1963). One group consisted of highly aggressive children, the other of more inhibited children. According to Bandura's theory, the children's behavior should reflect their parents' behavior.

The research showed that the parents of the inhibited children were inhibited, and the parents of the aggressive children were aggressive.

Verbal modeling can induce certain behaviors, as long as the activities involved are fully and adequately explained. Verbal modeling is often used to provide instructions, a technique

applicable to teaching such skills as driving a car. Verbal instructions are usually supplemented by behavioral demonstrations, such as when a driving instructor serves as a model performing the behaviors involved in driving.

Disinhibition

Research has shown that behaviors a person usually suppresses or inhibits may be performed more readily under the influence of a model (Bandura, 1973, 1986). This phenomenon, called **disinhibition**, refers to the weakening of an inhibition or restraint through exposure to a model. For example, people in a crowd may start a riot, breaking windows and shouting, exhibiting physical and verbal behaviors they would never perform when alone. They are more likely to discard their inhibitions against aggressive behavior if they see other people doing so.

The disinhibition phenomenon can influence sexual behavior. In an experiment that demonstrated how sexual responses could be disinhibited by models, a group of male undergraduate college students was shown a film that contained erotic pictures of nude males and females (Walters, Bowen, & Parke, 1963). The students were told that a spot of light would move over the film, indicating the eye movements of a previous subject, to show what parts of the pictures that subject looked at. These alleged eye movements of the previous subject represented the model. For half the research participants, the spot of light concentrated on breasts and genitals. For the other half, the light stayed in the background, as though the model had avoided looking at the naked bodies.

After watching the film, the research participants were shown stills from the movie while their eye movements were recorded. Those research participants whose model was considered uninhibited (who had looked directly at the erotic parts of the bodies) behaved similarly. Those research participants whose model had avoided looking at the nudes spent significantly more time examining the background of the pictures. The researchers concluded that modeling affected the research participants' perceptual responses to the stimuli. In other words, modeling determined not only what the research participants did but also what they looked at and perceived.

The Effects of Society's Models

On the basis of extensive research, Bandura concluded that much behavior—good and bad, normal and abnormal—is learned by imitating the behavior of other people. From infancy on, we develop responses to the models society offers us. Beginning with parents as models, we learn their language and become socialized by the culture's customs and acceptable behaviors. People who deviate from cultural norms have learned their behavior the same way as everyone else. The difference is that deviant persons have followed models the rest of society considers undesirable. Bandura is an outspoken critic of the type of society that provides the wrong models for its children, particularly the examples of violent behavior that are standard fare on television and in movies and video games. His research clearly shows the effect of models on behavior. If what we see is what we become, then the distance between watching an aggressive animated character and committing a violent act ourselves is not very great.

Among the many behaviors children acquire through modeling are nonrational fears. A child who sees that his or her parents are fearful during thunderstorms or are nervous around strangers will easily adopt these anxieties and carry them into adulthood with little awareness of their origin. Of course, positive behaviors such as strength, courage, and optimism will also be learned from parents and other models.

In Skinner's system, reinforcers control behavior; for Bandura, it is the models who control behavior.

Characteristics of the Modeling Situation

Bandura and his associates (Bandura, 1977, 1986) investigated three factors found to influence modeling:

1. The characteristics of the models
2. The characteristics of the observers
3. The reward consequences associated with the behaviors

The characteristics of the models affect our tendency to imitate them. In real life, we may be more influenced by someone who appears to be similar to us than by someone who differs from us in obvious and significant ways. In the laboratory, Bandura found that although children imitated the behaviour of a child model in the same room, a child in a film, and a filmed cartoon character, the extent of the modeling decreased as the similarity between the model and the subject decreased. The children showed greater imitation of a live model than an animated character, but even in the latter instance the modeled behavior was significantly greater than that of the control group that observed no models.

Other characteristics of the model that affect imitation are age and sex. We are more likely to model our behavior after a person of the same sex than a person of the opposite sex. Also, we are more likely to be influenced by models our own age. Peers who appear to have successfully solved the problems we are facing are highly influential models.

Status and prestige are also important factors. It was found that pedestrians were much more likely to cross a street against a red light if they saw a well-dressed person crossing than if they saw a poorly dressed person crossing. Television commercials make effective use of high-status, high-prestige models with athletes, rock stars, or movie stars who claim to use a particular product. The expectation is that consumers will imitate their behavior and buy the advertised product.

The type of behavior the model performs affects the extent of imitation. Highly complex behaviors are not imitated as quickly and readily as simpler behaviors. Hostile and aggressive behaviors tend to be strongly imitated, especially by children.

Characteristics of the observers.

The attributes of the observers also determine the effectiveness of observational learning. People who are low in self-confidence and self-esteem are much more likely to imitate a model's behavior than are people high in self-confidence and self-esteem. A person who has been reinforced for imitating a behavior—for example, a child rewarded for behaving like an older sibling—is more susceptible to the influence of models.

The reward consequences associated with the behaviors.

The reward consequences linked to a particular behavior can affect the extent of the modeling and even override the impact of the models' and observers' characteristics. A high-status model may lead us to imitate a certain behavior, but if the rewards are not meaningful to us, we will discontinue the behavior and be less likely to be influenced by that model in the future. Seeing a model receiving reward or punishment for displaying a particular behaviour affects imitation. In a Bobo doll study, some of the children watched as the model who hit the Bobo doll was given praise and a soda and candy. Another group of children saw the model receive verbal and physical punishment for the same aggressive behavior. The children who observed the punishment displayed significantly less aggression toward the Bobo doll than did the children who saw the model being reinforced (Bandura, 1965).

The Processes of Observational Learning

Bandura analyzed the nature of observational learning and found it to be governed by four related mechanisms: attentional processes, retention processes, production processes, and incentive and motivational processes.

Observational learning processes

<i>Attentional processes</i>	Developing our cognitive processes and perceptual skills so that we can pay sufficient attention to a model, and perceiving the model accurately enough, to imitate displayed behavior. Example: Staying awake during driver's education class.
<i>Retention processes</i>	Retaining or remembering the model's behavior so that we can imitate or repeat it at a later time; for this, we use our cognitive processes to encode or form mental images and verbal descriptions of the model's behavior. Example: Taking notes on the lecture material or the video of a person driving a car.
<i>Production processes</i>	Translating the mental images or verbal symbolic representations of the model's behavior into our own overt behavior by physically producing the responses and receiving feedback on the accuracy of our continued practice. Example: Getting in a car with an instructor to practice shifting gears and dodging the traffic cones in the school parking lot.
<i>Incentive and motivational processes</i>	Perceiving that the model's behavior leads to a reward and thus expecting that our learning—and successful performance—of the same behavior will lead to similar consequences. Example: Expecting that when we have mastered driving skills, we will pass the state test and receive a driver's license.

Attentional Processes

Observational learning or modeling will not occur unless the subject pays attention to the model. Merely exposing the subject to the model does not guarantee that the subject will be attentive to the relevant cues and stimulus events or even perceive the situation accurately. The subject must perceive the model accurately enough to acquire the information necessary to imitate the model's behavior. Several variables influence attentional processes. In the real world, as in the laboratory, we are more attentive and responsive to some people and situations than to others. Thus, the more closely we pay attention to a model's behavior, the more likely we are to imitate it. We have mentioned such characteristics as age, status, sex, and the degree of similarity between model and subject. These factors help determine how closely a subject attends to the model. It has also been found that celebrity models, experts, and those who appear confident and attractive command greater attention and imitation than models who lack these attributes. Some of the most effective models in American culture today appear on television. Viewers often focus on them even in the absence of reinforcement.

Attention to modeled behavior varies as a function of the observers' cognitive and perceptual skills and the value of the behavior being modeled. The more highly developed are our cognitive abilities and the more knowledge we have about the behaviour being modeled, the more carefully we will attend to the model and perceive the behavior. When observers watch a model doing something they expect to do themselves, they pay greater attention than when the modeled behavior has no personal relevance. Observers also pay closer attention to modeled behavior that produces positive or negative consequences rather than neutral outcomes.

Retention Processes

Research participants must remember significant aspects of the model's behaviour in order to repeat it later. To retain what has been attended to, we must encode it and represent it symbolically. These internal retention processes of symbolic representation and image formation are cognitive processes. Thus, Bandura recognizes the importance of cognitive processes in developing and modifying behavior. Recall, for comparison, that Skinner's focus was exclusively on overt behavior.

We retain information about a model's behavior in two ways: through an imaginal internal representational system or through a verbal system. In the imaginal system, we form vivid, easily retrievable images while we are observing the model. This common phenomenon accounts for your being able to summon up a picture of the person you dated last week or the place you visited last summer. In observational learning, we form a mental picture of the model's behavior and use it as a basis for imitation at some future time.

The verbal representational system operates similarly and involves a verbal coding of some behavior we have observed. For example, during observation we might describe to ourselves what the model is doing. These descriptions or codes can be rehearsed silently, without overtly displaying the behavior. For example, we might talk ourselves through the steps in a complicated skill, mentally rehearsing the sequence of behaviors we will perform later. When we wish to perform the action, the verbal code will provide hints, reminders, and cues. Together, these

images and verbal symbols offer the means by which we store observed situations and rehearse them for later performance.

Production Processes

Translating imaginal and verbal symbolic representations into overt behavior requires the production processes, described more simply as *practice*. Although we may have attended to, retained, and rehearsed symbolic representations of a model's behavior, we still may not be able to perform the behavior correctly. This is most likely to occur with highly skilled actions that require the mastery of many component behaviors.

Consider learning to drive a car. We learn fundamental motions from a lecture and from watching a model drive. We may consider the symbolic representations of the model's behavior many times, but at first our translation of these symbols into actual driving behavior will be clumsy. We may shift into the wrong gear or overcorrect the steering. Our observations may not have been sufficient to ensure immediate and skilled performance of the actions. Practice of the proper physical movements, and feedback on their accuracy, is needed to produce the smooth performance of the behavior.

Incentive and Motivational Processes

No matter how well we attend to and retain behaviors we observe or how much ability we have to perform them, we will not do so without the incentive or motivation processes. When incentives are available, observation is more quickly translated into action. Incentives also influence the attentional and retention processes. We may not pay as much attention without an incentive to do so, and when less attention is paid, there is less to retain. Our incentive to learn is influenced by our anticipation of the reinforcement or punishment for doing so. Seeing that a model's behavior produces a reward or avoids a punishment can be a strong incentive for us to pay attention to, remember, and perform a behavior correctly. The reinforcement is experienced vicariously during our observation of the model, after which we expect our performance of the same behaviour to lead to the consequences we saw.

Bandura pointed out that although reinforcement can facilitate learning, reinforcement is not required for learning to occur. Many factors other than the reward consequences of the behavior determine what we attend to, retain, and rehearse. For example, loud sounds, bright lights, and exciting videos may capture our interest even though we may not have received any reinforcement for paying attention to them. Bandura's research showed that children watching a model on television imitate the model's behavior regardless of whether they have been promised a reward. Therefore, reinforcement can assist in modeling but is not vital to it. When reinforcement occurs, it can be given by another person, experienced vicariously, or administered by oneself.

Self-Reinforcement and Self-Efficacy

In Bandura's approach to personality, the self is not some psychic agent that determines or causes behavior. Rather, the self is a set of cognitive processes and structures concerned with

thought and perception. Two important aspects of the self are self-reinforcement and self-efficacy.

Self-Reinforcement

Self-reinforcement is as important as reinforcement administered by others, particularly for older children and adults. We set personal standards of behavior and achievement. We reward ourselves for meeting or exceeding these expectations and standards and we punish ourselves for our failures. Self-administered reinforcement can be tangible such as a new pair of gym shoes or a car, or it can be emotional such as pride or satisfaction from a job well done. Self-administered punishment can be expressed in shame, guilt, or depression about not behaving the way we wanted to.

Self-reinforcement appears conceptually similar to what other theorists call *conscience* or *superego*, but Bandura denies that it is the same.

A continuing process of self-reinforcement regulates much of our behavior. It requires internal standards of performance, subjective criteria or reference points against which we evaluate our behavior. Our past behavior may become a reference point for evaluating present behavior and an incentive for better performance in the future. When we reach a certain level of achievement, it may no longer challenge, motivate, or satisfy us, so we raise the standard and require more of ourselves. Failure to achieve may result in lowering the standard to a more realistic level. People who set unrealistic performance standards—who observed and learned behavioral expectations from unusually talented and successful models—may continue to try to meet those excessively high expectations despite repeated failures.

Emotionally, they may punish themselves with feelings of worthlessness and depression. These self-produced feelings can lead to self-destructive behaviors such as alcohol and drug abuse or a retreat into a fantasy world. We learn our initial set of internal standards from the behavior of models, typically our parents and teachers. Once we adopt a given style of behavior, we begin a lifelong process of comparing our behavior with theirs.

Self-Efficacy

How well we meet our behavioral standards determines our **self-efficacy**. In Bandura's system, self-efficacy refers to feelings of adequacy, efficiency, and competence in coping with life. Meeting and maintaining our performance standards enhances self-efficacy; failure to meet and maintain them reduces it.

Another way Bandura described self-efficacy was in terms of our perception of the control we have over our life.

People low in self-efficacy feel helpless, unable to exercise control over life events. They believe any effort they make is futile. When they encounter obstacles, they quickly give up if their initial attempt to deal with a problem is ineffective. People who are extremely low in self-efficacy will not even attempt to cope because they are convinced that nothing they do will make a difference.

Why, they ask, should they even try? Low self-efficacy can destroy motivation, lower aspirations, interfere with cognitive abilities, and adversely affect physical health.

People high in self-efficacy believe they can deal effectively with events and situations. Because they expect to succeed in overcoming obstacles, they persevere at tasks and often perform at a high level. These people have greater confidence in their abilities than do persons low in self-efficacy, and they express little self-doubt. They view difficulties as challenges instead of threats and actively seek novel situations.

High self-efficacy reduces fear of failure, raises aspirations, and improves problem solving and analytical thinking abilities. One researcher defined self-efficacy quite simply and effectively as the “power of believing you can,” and added that “believing that you can accomplish what you want to accomplish is one of the most important ingredients . . . in the recipe for success” (Maddux, 2002, p. 277). Thus, *believing* that you have the ability to be successful becomes a powerful asset as you strive for achievement.

Sources of information about self-efficacy

Our judgment about our self-efficacy is based on four sources of information:

- Performance attainment
- Vicarious experiences
- Verbal persuasion
- Physiological and emotional arousal

The most influential source of efficacy judgments is *performance attainment*. Previous success experiences provide direct indications of our level of mastery and competence. Prior achievements demonstrate our capabilities and strengthen our feelings of self-efficacy. Prior failures, particularly repeated failures in childhood, lower self-efficacy.

An important indicator of performance attainment is receiving feedback on one’s progress or one’s performance on a task, such as a work assignment or a college examination. One study of 97 college students performing complicated puzzles found that those who received positive feedback on their performance reported higher levels of perceived competence at that task than did those who received negative feedback (Elliot et al., 2000).

A study of 49 older adults showed that those who completed a 6-month training program in the Chinese art of Tai Chi reported significant increases in self-efficacy as compared to those who did not undertake the training (Li, McAuley, Harmer, Duncan, & Chaumeton, 2001). Similar results were obtained in a study of 125 women college students who completed a 16-hour physical self-defense training course. These students showed significantly higher levels of self-efficacy in a variety of areas including physical competence, general coping skills, and interpersonal assertiveness. A control group that had not taken the self-defense course showed no change in self-efficacy (Weitlauf, Cervone, Smith, & Wright, 2001). Thus, put simply, the more we achieve, the more we believe we can achieve, and the more competent and in control we feel.

Short-term failures in adulthood can lower self-efficacy. In one study, 60 college students were given a cognitive task. Ratings of item difficulty and feedback indicated that they performed

either very well or very poorly. Self-report measures of their self-efficacy expectations for future tasks showed that persons who believed they had performed well on the cognitive task had a high self-efficacy expectancy for future performance. Those who thought they had performed poorly had a low expectation about their future performance (Sanna & Pusecker, 1994).

Vicarious experiences—seeing other people perform successfully—strengthen self-efficacy, particularly if the people we observe are similar in abilities. In effect, we are saying, “If they can do it, so can I.” In contrast, seeing others fail can lower self-efficacy: “If they can’t do it, neither can I.” Therefore, effective models are vital in influencing our feelings of adequacy and competence. These models also show us appropriate strategies for dealing with difficult situations.

Verbal persuasion, which means reminding people that they possess the ability to achieve whatever they want to achieve, can enhance self-efficacy. This may be the most common of the four informational sources and one frequently offered by parents, teachers, spouses, coaches, friends, and therapists who say, in effect, “You can do it.” To be effective, verbal persuasion must be realistic. It is probably not the best advice to encourage someone 5 feet tall to play professional basketball when other sports, such as martial arts, might be more appropriate. A fourth source of information about self-efficacy is *physiological and emotional arousal*. How fearful or calm do we feel in a stressful situation? We often use this type of information as a basis for judging our ability to cope. We are more likely to believe we will master a problem successfully if we are not agitated, tense, or bothered by headaches. The more composed we feel, the greater our self-efficacy.

Whereas the higher our level of physiological and emotional arousal, the lower our self-efficacy. The more fear, anxiety, or tension we experience in a given situation, the less we feel able to cope.

Bandura concluded that certain conditions increase self-efficacy:

1. Exposing people to success experiences by arranging reachable goals increases performance attainment.
2. Exposing people to appropriate models who perform successfully enhances vicarious success experiences.
3. Providing verbal persuasion encourages people to believe they have the ability to perform successfully.
4. Strengthening physiological arousal through proper diet, stress reduction, and exercise programs increases strength, stamina, and the ability to cope.

In his research, Bandura applied these conditions to enhance self-efficacy in a variety of situations. He has helped research participants learn to play musical instruments, relate better to persons of the opposite sex, master computer skills, give up cigarette smoking, and conquer phobias and physical pain.

Developmental Stages of Modeling and Self-Efficacy Childhood

In infancy, modeling is limited to immediate imitation. Infants have not yet developed the cognitive capacities (the imaginal and verbal representational systems) needed to imitate a

model's behavior at some time after observing it. In infancy, it is necessary for the modeled behavior to be repeated several times after the infant's initial attempt to duplicate it. Also, the modeled behavior must be within the infant's range of sensorimotor development. By about age 2, children have developed sufficient attentional, retention, and production processes to begin imitating behaviour some time after the observation rather than immediately.

The behaviors we find reinforcing, and thus choose to imitate, will change with age. Younger children are reinforced primarily by physical stimuli such as food, affection, or punishment. Older children associate positive physical reinforcers with signs of approval from significant models and unpleasant reinforcers with signs of disapproval. Eventually these rewards or punishments become self-administered. Self-efficacy also develops gradually. Infants begin to develop self-efficacy as they attempt to exercise greater influence over their physical and social environments. They learn about the consequences of their own abilities such as their physical prowess, social skills, and language competence. These abilities are in almost constant use acting on the environment, primarily through their effects on parents. Ideally, parents are responsive to their growing child's activities and attempts to communicate, and will provide stimulating surroundings that permit the child the freedom to grow and explore. These early efficacy-building experiences are centered on the parents. Parental behaviours that lead to high self-efficacy in children differ for boys and girls. Studies have shown that high self-efficacy men had, when they were children, warm relationships with their fathers. Mothers were more demanding than fathers, expecting higher levels of performance and achievement. In contrast, high self-efficacy women experienced, as children, pressure from their fathers for high achievement (Schneewind, 1995).

The significance of parental influence diminishes as the child's world expands and admits additional models such as siblings, peers, and other adults. Like Adler, Bandura considered birth order within the family to be important. He argued that first-born children and only children have different bases for judging their own abilities than do laterborn children. Also, siblings of the same sex are likely to be more competitive than are siblings of the opposite sex, a factor also related to the development of self-efficacy. Among playmates, children who are the most experienced and successful at tasks and games serve as high-efficacy models for other children. Peers provide comparative reference points for appraising one's own level of achievement. Teachers influence self-efficacy judgments through their impact on the development of cognitive abilities and problem-solving skills, which are vital to efficient adult functioning. Children often rate their own competence in terms of their teachers' evaluations of them. In Bandura's view, schools that use ability groupings undermine self-efficacy and self-confidence in students assigned to the lower groups. Competitive practices such as grading on a curve also doom poor achievers to average or low grades.

Adolescence

The transitional experiences of adolescence involve coping with new demands and pressures, from a growing awareness of sex to the choice of college and career. Adolescents must establish new competencies and appraisals of their abilities. Bandura noted that the success of this stage typically depends on the level of self-efficacy established during the childhood years.

Adulthood

Bandura divided adulthood into two periods, young adulthood and the middle years. Young adulthood involves adjustments such as marriage, parenthood, and career advancement. High self-efficacy is necessary for successful outcomes of these experiences. People who are low in self-efficacy will not be able to deal adequately with these situations and are likely to fail to adjust. Studies show that adult women who feel high in self-efficacy about their parenting skills are likely to promote self-efficacy in their children. Women who believe they are good parents are less subject to despondency and emotional strain in their role as parent than are women low in self-efficacy (Olioff & Aboud, 1991; Teti & Gelfand, 1991). Other research showed that high self-efficacy mothers who work outside the home experience significantly less physical and emotional strain from work-family conflicts than do women low in self-efficacy (Bandura, 1995). The middle years of adulthood are also stressful as people reevaluate their careers and their family and social lives. As we confront our limitations and redefine our goals, we must reassess our skills and find new opportunities for enhancing our self-efficacy.

Old Age

Self-efficacy reassessments in old age are difficult. Declining mental and physical abilities, retirement from active work, and withdrawal from social life force a new round of self-appraisal. A lowering of self-efficacy can further affect physical and mental functioning in a kind of self-fulfilling prophecy. For example, reduced self-confidence about sexual performance can lead to a reduction in sexual activity. Lower physical efficacy can lead to fatigue and a curtailment of physical activities. If we no longer believe we can do something we used to enjoy and do well, then we may not even try. To Bandura, self-efficacy is the crucial factor in determining success or failure throughout the entire life span.

Behavior Modification

Bandura's goal in developing his social-cognitive theory was to modify or change those learned behaviors that society considers undesirable or abnormal. Like Skinner's approach to therapy, Bandura's focuses on external aspects, those inappropriate or destructive behaviors, in the belief that they are learned, just as all behaviors are learned. Bandura does not attempt to deal with underlying unconscious conflicts. It is the behavior or symptom, rather than any presumed internal neurosis, that is the target of the social-learning approach.

Fears and Phobias

If modeling is the way we learn our behaviors originally, then it should also be an effective way to relearn or change behavior. Bandura applied modeling techniques to eliminate fears and other intense emotional reactions. In one early study, children who were afraid of dogs observed a child of the same age playing with a dog (Bandura, Grusec, & Menlove, 1967). While the research participants watched from a safe distance, the model made progressively bolder movements toward the dog. The model petted the dog through the bars of a playpen, then went inside the pen and played with the dog. The observers' fear of dogs was considerably reduced as a result of this observational learning situation.

In a classic study of snake phobia, Bandura and his associates eliminated an intense fear of snakes in adult research participants (Bandura, Blanchard, & Ritter, 1969). The research participants watched a film in which children, adolescents, and adults made progressively closer contact with a snake. At first, the filmed models handled plastic snakes, then touched live snakes, and finally let a large snake crawl over their body. The phobic research participants were allowed to stop the film whenever the scenes became too threatening. Gradually, their fear of snakes was overcome. A technique called *guided participation* involves watching a live model and then participating with the model. For example, to treat a snake phobia, research participants watch through an observation window while a live model handles a snake. The research participants enter the room with the model and observe the handling of the snake at close range. Wearing gloves, research participants are coaxed into touching the middle of the snake while the model holds the head and tail. Research participants eventually come to touch the snake without gloves. Modeling has been shown to be effective even in the absence of an observable model. In *covert modeling*, research participants are instructed to imagine a model coping with a feared or threatening situation; they do not actually see a model. Covert modeling has been used to treat snake phobias and social inhibitions. You may not think that a fear of snakes is so terrible, but overcoming this fear brought about significant changes in the research participants' ability to cope with life, even for those who never encountered snakes. In addition to bolstering self-esteem and self-efficacy, eliminating a snake phobia changed personal and work habits. One subject was able to wear a necklace for the first time; previously she had not been able to do so because necklaces reminded her of snakes. A realtor treated successfully for snake phobia was able to increase his income because he no longer feared visiting properties in rural areas. Many other phobics treated by modelling therapy were freed from nightmares about snakes. Phobias restrict our daily life. For example, many people who fear spiders react with rapid heartbeat, shortness of breath, and vomiting even from seeing a picture of a spider. Phobics doubt their self-efficacy in these fear-provoking situations and have little confidence in their ability to deal with the source of the phobia. To relieve people of these fears expands their environment and increases their self-efficacy.

Modeling therapy, particularly using film and video techniques, offers several practical advantages. Complex behaviors can be seen as a whole. Extraneous behaviours can be edited out so that the subject's time is spent viewing only relevant behaviors.

Films can be repeated with many patients and used by several therapists simultaneously. Modeling techniques can also be used with groups, saving time and money in treating people with the same problem. The approach has been effective with phobias, obsessive-compulsive disorders, and sexual dysfunctions, and the positive effects have been reported to last for years.

Modeling techniques have been shown to affect our ability to tolerate pain. Male college students performing a pain-inducing isometric exercise were shown a videotape of models doing the same exercise. Some of the models appeared to tolerate the pain well, while others did not. Research participants who saw the pain-tolerant models continued to exercise for a significantly longer period of time and reported significantly less discomfort than did research participants whose models seemed more adversely affected by the pain. In addition, those research participants who viewed pain-intolerant models experienced the onset of pain sooner during the exercise period as well as an accelerated heart rate (Symbaluk, Heth, Cameron, & Pierce, 1997).

Considerable research has been conducted on self-efficacy during and after behaviour modification therapy. The results have shown that as the research participants' self-efficacy improved during treatment, they were increasingly able to deal with the source of the fear. It was the therapeutic procedure itself that enhanced self-efficacy.

Anxiety

We noted that many behaviors can be modified through the modeling approach. We will consider two instances: fear of medical treatment and test anxiety.

Fear of medical treatment Some people have such an intense fear of medical situations that they are prevented from seeking treatment. One early study dealt with children who were scheduled for surgery and had never been in a hospital before. They were divided into two groups: an experimental group that watched a film about a boy's experience in the hospital, and a control group that saw a film about a boy taking a trip (Melamed & Siegel, 1975). The child in the hospital film was an exemplary model. Despite some initial anxiety, he coped well with the doctors and the medical procedures.

The children's anxiety was assessed by several techniques including direct observation of behavior, responses on self-report inventories, and physiological measures. These assessments were made the night before surgery and were repeated a few weeks later. The results showed that the modeling film had been effective in reducing anxiety. Research participants who had seen the hospital film had fewer behavior problems after hospitalization than did research participants in the control group. Similar procedures have been used to reduce fear of hospitalization in adults as well as fear of dental treatment. One study involved a medical procedure considered so stressful that more than 80 percent of patients initially refused to undergo it or quit it prematurely (Allen, Danforth, & Drabman, 1989). Research participants who watched a video of a model having the procedure and describing how he coped with his distress were more likely to complete the treatment with less anxiety and a shorter hospital stay.

Test anxiety

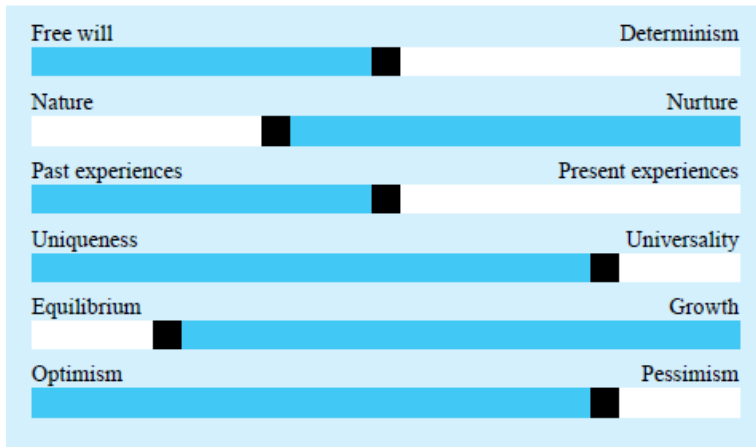
For some college students, test anxiety is so serious that their examination performance does not accurately reflect their knowledge of the material being tested. In the classic research, a sample of college students was divided into groups based on their personality test scores: those high in test anxiety and those low in test anxiety (Sarason, 1975). Some of the students saw a filmed model talking about her anxiety when taking tests and her ways of dealing with it. Other students saw a film of the same model who talked about test anxiety but not about coping mechanisms. Under a third condition, students watched the filmed model talking about other college activities. The research participants were given a list of nonsense syllables to memorize and were tested on their ability to recall them. The results showed that research participants high in test anxiety were most strongly affected by the model who talked about coping mechanisms. They performed significantly better on the recall test than did high-anxiety research participants who had been exposed to the other two conditions.

Ethical Issues in Behavior Modification

Although the results of behavior modification are impressive, the techniques have drawn criticism from educators, politicians, and some psychologists. They have suggested that behavior modification exploits people, manipulating and controlling them against their will. Bandura believes these charges are misleading. Behavior modification does not occur without the client's awareness. Indeed, self-awareness and self-regulation are vital for any program of changing or relearning behaviors. Thus, modification techniques are not effective unless the person is able to understand what behaviors are being reinforced. Further, the clients themselves decide what they want to change. They are not being controlled by anyone else. People come to a therapist to eliminate specific fears and anxieties that inhibit their ability to function or cope with daily life. Bandura emphasized that the client–therapist relationship is a contract between two consenting individuals, not a relationship between a sinister master-controller and a spineless puppet. Bandura also noted that far from manipulating or enslaving, modeling techniques actually increase personal freedom. People who are afraid to leave the house or who have a compulsion to wash their hands continually are not truly free. They are living within the constraints imposed by their phobic or compulsive behavior. Those constraints allow little choice. Removing them through behavior modification increases freedom and the opportunity for personal growth. Many behavior modification techniques have derived from Bandura's work. They have become increasingly popular alternatives to psychoanalysis and other therapeutic approaches.

Questions About Human Nature

Bandura's position is clear on the issue of free will versus determinism (see Figure). Behavior is controlled by the person through the cognitive processes, and by the environment through external social situations. Bandura calls this view **reciprocal determinism**. He noted that people are neither "powerless objects controlled by environmental forces nor free agents who can become whatever they choose. Both people and their environments are reciprocal determinants of each other" (1977, p. vii). He later introduced the notion of **triadic reciprocity**, in which three factors—behavior, cognitive processes, and environmental variables—interact (Bandura, 1986). Although our behavior is influenced by external social and environmental forces, we are not helpless with respect to them. Our reactions to stimuli are self-activated in accordance with our learned expectations. Following Bandura's rules for observational learning, we observe and interpret the potential effects of our actions and determine which behaviors are appropriate for a given situation. We encode and represent these external events symbolically and anticipate that a certain behaviour will bring a certain response. Thus, we choose and shape our behavior to gain reinforcement and avoid punishment.



This viewpoint accepts self-awareness, self-reinforcement, and other internal forms of the regulation of behavior. Reinforcement does not automatically change behavior. When it does effect a change, it is usually because the individual is aware of what is being reinforced and expects the same reward for behaving that way again.

Some degree of self-direction interacts with past and present events. Thus, we are influenced by external forces and in turn guide the extent and direction of such influences. The notion of self-direction of behavior represents an optimistic view of human nature. Bandura believes that individuals create their own environments. He suggests that abnormal behaviors, which he sees as little more than bad habits, can be changed by behavior modification techniques.

On the nature–nurture issue, Bandura proposes that most behaviors (except basic reflexes) are learned and that genetic factors play a minor role. However, he recognizes that hereditary factors such as body type, physical maturation, and appearance can influence the reinforcers people receive, particularly in childhood.

For example, clumsy, unattractive children will receive different reinforcers than children who are graceful and attractive.

Childhood experiences are important in Bandura’s theory. Childhood learning may be more influential than learning in adulthood. Our internal performance standards, which affect our self-efficacy, are established in childhood, along with a set of ideal behaviors. However, childhood experiences can be unlearned later in life, and new performance standards and behaviors may be substituted. We are not captives of the reinforcers we received in our early years. Because at least some behaviour results from experience, it may be inferred that Bandura accepts the uniqueness of personality. Also, our ultimate and necessary goal in life is to set realistic performance standards to maintain an adequate level of self-efficacy.

Assessment in Bandura’s Theory

Like Skinner, Bandura focuses on behavior rather than on internal motivating variables. He did not use assessment measures such as free association, dream analysis, or projective techniques. Unlike Skinner, Bandura accepted the operation of cognitive variables. It is these cognitive variables, as well as behavior, that can be assessed.

For example, in the modeling study we described involving children about to undergo surgery, assessment techniques included direct observation, self-report inventories, and physiological measurements. In studies of self-efficacy, behavioural and cognitive variables were assessed quantitatively. Self-efficacy with regard to phobias was assessed by the research participants' self-ratings of the number of tasks on a behavioral-avoidance test they expected to be able to complete. College students' test anxiety was assessed by personality inventories. Thus, the assessment of behavioral and cognitive variables is important in the social-learning approach to personality.

Research in Bandura's Theory

Bandura favors well-controlled laboratory investigations in the rigorous tradition of experimental psychology. We noted his use of experimental and control groups and the precise measurement of independent and dependent variables. He studies large subject groups and compares their average performance by statistical analysis. The research participants he has selected have shown diverse behavioral disorders, such as phobias, alcoholism, fetishism, and sexual dysfunctions. The ages of the research participants range from preschool through adult. Thus, his social-learning theory is based on a broad range of human research participants. This approach increases the generalizability and applicability of his research findings.

To illustrate further the kind of research that has proceeded from Bandura's theory, we consider representative work on self-efficacy and on the effect of televised models on aggressive behavior.

Self-Efficacy – Age and gender differences

Self-efficacy differs as a function of gender and age. Research with children and adults shows that on the average, men score higher than women in self-efficacy. These gender differences peak during the 20s and decline in later years. For both sexes, self-efficacy increases through childhood and early adulthood, peaks in middle age, and declines after age 60 (Gecas, 1989; Lachman, 1985).

Physical appearance

We noted Bandura's suggestion that physical appearance can influence the reinforcers people receive from others and, thus, how they feel about themselves. A study of 210 adult men and women ages 25–76 showed that physical appearance had a greater effect on their feelings of being in control of their lives than did their level of self-esteem or their health (Andreoletti, Zebrowitz, & Lachman, 2001).

For example, having a round face, large eyes, small nose bridge, and small chin ("babyfacedness") was found to be strongly related to low control beliefs in young and middle adulthood. Older babyfaced adults reported stronger feelings of control, perhaps because people reacted to them differently since they looked younger than did thin-faced people of the same age. The findings

were stronger for women; a more youthful appearance later in life was shown to have definite advantages both socially and in the workplace.

Another major finding in this study was the significant effect of physical attractiveness on control beliefs. People who were rated less attractive reported lower feelings of control in both job and social situations. In addition, shorter people reported lower feelings of control in young adulthood than did taller people or those of average height.

Academic performance

Research demonstrates a significant positive relationship between self-efficacy and academic performance. Teachers with a high degree of self-efficacy or confidence in their teaching abilities create more opportunities for their students to achieve at a high level. Self-efficacy in students is also positively related to motivation, level of effort, and persistence in classroom situations (Gibson & Dembo, 1984; Multon, Brown, & Lent, 1991; Zimmerman, 1995).

Bandura also found differences in the ways schools inculcate self-efficacy in their students. In high-achieving schools, principals were more concerned with education than with implementing policies and regulations, and teachers set high expectations and standards for their students. In low-achieving schools principals functioned more as administrators and disciplinarians than as educators, and teachers expected little in the way of academic performance from their students (Bandura, 1997).

Cultural differences have been shown to influence self-efficacy in children. A study was conducted with 800 elementary school students in grades two to six in East and West Germany, before those nations were reunified. Students in the East German communist-collectivist culture scored lower in self-efficacy than did children in the West German capitalist-individualist culture. The East German children had less confidence in their ability to perform well in school and considered themselves to be less intelligent than West German students (Oettingen & Maier, 1999).

Career choice and job performance.

Gender differences in self-efficacy can influence our choice of career. Research has shown that men perceive themselves to be high in self-efficacy for so-called traditional “male” as well as traditional “female” occupations. In contrast, women perceive themselves high in self-efficacy for so-called female occupations but low in self-efficacy for traditional male occupations. The men and women research participants in this research performed at comparable levels on standardized tests of verbal and quantitative skills. Thus, they possessed similar measurable abilities but perceived these abilities differently. Their feelings about their own competence for various careers differed as a function of gender (Hackett, 1995). The higher the level of self-efficacy, the wider the range of career possibilities and the stronger the interest taken in them. Low self-efficacy may restrict the careers a person considers and contribute to indecisiveness about the options believed to be viable (Bores-Rangel, Church, Szendre, & Reeves, 1990). In one study, first-year women college students were found to be lower in self-efficacy than first-year men with regard to perceived ability to perform well in math courses (Lapan, Boggs, & Morrill,

1989). This affected the choice of college major and led women to avoid such programs as engineering and science, which in turn limited their career options. Self-efficacy can affect the amount of time spent job hunting as well as future job success. Employees high in self-efficacy set higher personal goals and were more committed to them than were employees low in self-efficacy. Those high in self-efficacy focused on analyzing and solving problems on the job, whereas those low in self-efficacy focused on personal deficiencies and the fear of failure, which undermined their productivity (Locke & Latham, 1990).

The significant positive relationship between self-efficacy and job performance was supported by a meta-analysis of 114 research studies involving more than 21,600 research participants. The higher our level of self-efficacy, the better is our performance on the job (Stajkovic & Luthans, 1998). Other research has demonstrated that people high in self-efficacy are more successful in job training programs and report higher levels of job satisfaction, organizational commitment, and job performance than do people who are low in self-efficacy (Salas & Cannon-Bowers, 2001).

Physical health

Self-efficacy also affects several aspects of physical well-being. In one study, pregnant women who had been taught relaxation and breathing exercises to reduce pain during childbirth believed they had greater control over that pain than did women who had not been taught relaxation techniques. The higher the women's self-efficacy and feeling of control, the longer they were able to tolerate the discomfort experienced during delivery before requesting pain medication. In addition, the higher their perceived self-efficacy, the less pain medication they required (Manning & Wright, 1983).

Other research supports the positive relationship between self-efficacy and pain tolerance. Coping techniques that improve self-efficacy produce substantial increases in endorphins, which are the body's natural painkillers. In a study on chronic pain, 45 patients suffering low back pain were given a pain-rating scale and a self-efficacy rating scale. Their progress in a 3-week rehabilitation program was monitored. After 6 months it was found that patients higher in self-efficacy reported better physical functioning and less back pain than did patients lower in self-efficacy (Altmaier, Russell, Kao, Lehmann, & Weinstein, 1993).

Self-efficacy is also related to the maintenance of healthy behaviors. A study of 114 Native American and native Alaskan adults showed a clear relationship between self-efficacy and alcohol use. The lower the level of self-efficacy, the greater the alcohol consumption (Taylor, 2000). In the case of cigarette smoking, studies of adolescents show that the higher their self-efficacy, the more resistant they are to peer pressure to start smoking. Among college student smokers, high self-efficacy was found to be the best predictor of an expressed intention to reduce the number of cigarettes smoked or to quit (Schwarzer & Fuchs, 1995; Stacy, Sussman, Dent, Burton, & Floy, 1992). Other studies show that people high in self-efficacy are more likely to stop smoking because they are confident of success whereas people low in self-efficacy are unlikely even to try (Becona, Frojan, & Lista, 1988; DiClemente, Prochaska, & Gilbertini, 1985). For other research participants, self-efficacy measured before attempting to quit smoking was

significantly related to smoking behavior a month after quitting. The higher the initial self-efficacy, the fewer cigarettes smoked during the month. Research participants who resisted smoking during that time period had greater self-efficacy than did those who resumed smoking (Garcia, Schmitz, & Doerfler, 1990). High self-efficacy has also been related to other health-enhancing behaviors such as exercise, weight control, and safe sex practices. Self-efficacy affects recovery from physical illness. For example, one study found that people high in self-efficacy responded better to cognitive and behavioral treatment for pulmonary disease than did patients low in self-efficacy. Men who suffered heart attacks showed a higher rate of return to normal activities and less fear and depression when both they and their spouses believed in their cardiac fitness. The higher the patients' self-efficacy, the more likely they were to follow prescribed exercise programs and the more they improved (Kaplan, Atkins, & Reinsch, 1984; McLeod, 1986).

A study of 105 adult patients recovering from orthopedic surgery (hip or knee replacement) showed that those high in self-efficacy performed significantly better in rehabilitation therapy programs than did those low in self-efficacy (Waldrop, Lightsey, Ethington, Woemmel, & Coke, 2001). And a study of 69 breast cancer patients found that the higher the expectation of remaining cancer-free in the future, the better the emotional adjustment to the disease (Carver et al., 2000).

Mental health

In Italy, a study of 282 boys and girls whose average age was 11.5 years found that children who rated themselves low in social and academic efficacy were significantly more likely to experience depression than were children who rated themselves high in efficacy. Low social efficacy has also been significantly related to depression in a sample of adolescents in the United States (Bandura, Pastorelli, Barbarelli, & Caprara, 1999). In a study of adolescents in the Netherlands, low social efficacy was related to high levels of anxiety, neuroticism, and symptoms of depression (Muris, 2002). A similar relationship was documented with adult research participants. Low social efficacy was found to contribute to feelings of depression, partly because a lack of coping skills inhibited the development of a social support network (Holahan & Holahan, 1987). These findings may indicate a circular relationship rather than simple cause-and-effect. Low self-efficacy can lead to depression, and depression can reduce self-efficacy. People who are depressed believe that they are far less capable than others of performing effectively in many areas of life and that they have little control over their situations (Bandura, 1997). A study of 185 college students in the United States related self-efficacy to several of the characteristics of mental health proposed by the neo-psychoanalytic theorist Alfred Adler (Chapter 4). Students who scored high in self-efficacy also scored higher in social interest, the desire to strive for perfection, and a sense of belonging than did students who scored low in self-efficacy (Dinter, 2000).

Coping with stress

Enhanced self-efficacy and a sense of control over life events are positively related to the ability to cope with stress and to minimize its harmful effects on biological functioning. Bandura wrote,

“A strong sense of coping efficacy reduces vulnerability to stress and depression in taxing situations and strengthens resiliency to adversity” (Bandura, 2001, p. 10). High self-efficacy has been associated with strengthening the body’s immune system, lowering the release of stress-related hormones, and reducing susceptibility to respiratory infections. Studies have shown that high self-efficacy can help women cope with the stress of abortion. A sample of 291 women completed questionnaires to rate perceived self-efficacy and to assess their mood immediately after the procedure and again 3 weeks later. Research participants higher in self-efficacy adjusted more satisfactorily with significantly less depression and higher mood states than did those lower in self-efficacy (Cozzarelli, 1993). Another study dealt with stress experienced following the birth of one’s first child. Self-report inventories assessed self-efficacy, psychological distress, and background variables such as income, age, education, and marital satisfaction. Women higher in self-efficacy coped better with the demands than did those lower in self-efficacy (Ozer, 1995).

A study of refugees migrating from East to West Germany after the destruction of the Berlin Wall in 1990 showed that people higher in self-efficacy adapted significantly better to the change from an economically disadvantaged lifestyle under a communist system to an affluent lifestyle under a capitalist system.

Perceived self-efficacy proved to be a powerful personal resource regarding the impact of migration stress on cognitive appraisals as well as on psychological and physical wellbeing.

. . . Highly self-efficacious migrants perceived the demands in their new life more as challenges and less as threats. They experienced lower anxiety, better health, and fewer health complaints than low self-efficacious migrants. (Jerusalem & Mittag, 1995, p. 195)

Collective Efficacy

Just as an individual may develop a sense of self-efficacy, a group of people working together in a common enterprise to achieve common goals may develop a sense of collective efficacy. For example, a baseball or football team, a department within a large organization, a military combat unit, or a group of neighbors uniting to fight a developer can engender the strong feeling that they can and will achieve their goals and overcome all obstacles.

The value of collective efficacy has been studied in college basketball teams. It was demonstrated that a high sense of collective efficacy arose in teams that had highly competent leaders early in the season and that had won most of their games in the previous season. Teams with the highest collective efficacy at the beginning of the new season placed better in end-of-season standings than did teams that scored low in collective efficacy (Watson, Chemers, & Preiser, 2001).

Television and Aggressive Behavior

Bandura and many other researchers have demonstrated convincingly that in laboratory situations and in the real world, seeing violence begets violence whether on television, in movies, or in our homes, streets, and schools.

For example, a group of delinquent boys displayed significantly more violent behavior toward their peers after watching violent films than did a control group of boys who saw nonviolent films. The kinds of aggressive acts the boys committed frequently duplicated those depicted in the films (Leyens, Camino, Parke, & Berkowitz, 1975). In another study, 9-year-old children who watched numerous violent television programs were found to be more aggressive 10 years later. A follow-up 20 years later showed that the same research participants still expressed a high level of aggression.

Other studies report similar relationships between viewing televised violence and behaving aggressively. These results have been confirmed in many countries including the United States, England, Belgium, Finland, Poland, and Australia (Eron, 1987; Huesmann, Eron, Dubow, & Seebauer, 1987).

A recent literature review confirms the relationship between the viewing of violent television programs and video games in childhood and later aggressive behaviour (see Rogoff, Paradise, Arauz, Correa-Chavez, & Angelillo, 2003). A study of 779 people in their early and mid-20s found a strong positive correlation between the amount of violence they had watched on television between the ages of 6 and 10 and their aggressive behavior as adults. In other words, the more TV violence to which they had been exposed as children, the more aggressive they were in their 20s (Huesmann, Moise-Titus, Podolski, & Eron, 2003).

In a different approach to the relationship between observed violence and aggressive behavior, researchers investigated the incidence of aggressive acts shortly after people viewed televised models committing violent acts. One analysis found a brief but sharp rise in violent actions peaking 3 to 4 days following highly publicized riots (Phillips, 1985). Murder rates in the United States were found to increase by more than 12 percent over the expected rate for the 3-day period following a televised championship boxing match, a phenomenon that was maintained over a 15-year period (Phillips, 1983). Self-directed violence also appears to increase following exposure to similar violence widely reported in the news media. The incidence of suicide tends to climb following the suicide of a movie star or other celebrity (Phillips, 1974).

Reflections on Bandura's Theory

Social learning theory focuses on overt behavior. Critics charge that this emphasis ignores distinctly human aspects of personality such as motivation and emotion. They draw an analogy with a physician whose patients have stomach pains. The physician who deals only with overt behavior may treat such patients by asking them to stop groaning and complaining and clutching their stomach. What may be required instead is medication or surgery. The physician must diagnose and treat the afflicted internal organ, the underlying cause of the pain. If just the symptom is treated and not the cause, critics say, substitute symptoms may appear. However, the social-learning approach has several advantages. First, it is objective and amenable to laboratory methods of investigation, making it congruent with the current emphasis in experimental psychology. Most experimental psychologists reject theoretical work in personality that posits unconscious or other internal driving forces that cannot be manipulated or measured under laboratory conditions. Therefore, Bandura's approach boasts a great amount of empirical support. This is particularly true for his concept of self-efficacy; research continues to confirm its

usefulness in the laboratory and in real-world situations (see, for example, Eccles & Wigfield, 2002). Second, observational learning and behavior modification are compatible with the functional, pragmatic spirit of American psychology. More readily than other approaches, observational-learning techniques can be taken from the laboratory and applied to practical problems. The techniques also provide more immediate reinforcement for the practitioner than do other approaches. For example, in clinical situations, dramatic changes can be seen in client behaviour within weeks or even days.

Behavior changes on a larger scale have also been demonstrated. Bandura's central idea, that people learn behaviors from role models whom they wish to emulate, has been used in radio and television programs in less well-developed nations to promote population control and to control the spread of AIDS. The stories presented in these media revolved around characters who modeled behaviors designed to achieve these public health goals not only for themselves but for the greater society as well. Studies have demonstrated significant changes in safe sex practices and in family planning practices following exposure to these models, reinforcing the notion that Bandura's ideas can be applied to the resolution of national as well as individual problems (Smith, 2002).

It is not surprising, then, that many researchers and clinicians continue to study and promote Bandura's social-learning theory. The great number of books, articles, and research studies deriving from it attests to its popularity as a way to study behaviour in the laboratory and to modify behavior in the real world. In 1980, the American Psychological Association formally recognized Bandura's contribution, his "masterful modeling as a researcher, teacher, and theoretician" (Distinguished Scientific Contribution Award, 1981, p. 27).

4.5 Mischel

4.6 Kelly

George Kelly was born on a farm in Kansas. An only child, he received a great deal of attention and affection from his parents, who were fundamentalist in their religious beliefs and committed to helping the less fortunate. They opposed frivolous entertainment such as dancing and card playing. When Kelly was 4 years old, the family traveled by covered wagon to Colorado to try farming there but soon returned to Kansas. Kelly's early education was erratic and conducted as much by his parents as by schoolteachers. At 13, he went to high school in Wichita and seldom lived at home after that. In 1926, he earned a bachelor's degree in physics and mathematics from Park College in Parkville, Missouri. But his interests had shifted from science to social problems. Kelly's future was uncertain.

He worked briefly as an engineer, then took a teaching job at a labor college in Minneapolis. Next, he became an instructor in speech for the American Banking Association and also taught citizenship courses to immigrants. He then enrolled in graduate school and received a master's degree in educational sociology from the University of Kansas in Lawrence. Accepting a job offer from a junior college in Iowa, Kelly taught various courses and coached the drama program. His career certainly showed no inclination toward psychology. In college, he had not been impressed by coursework in the field.

Kelly paid attention for several more class meetings and then gave up. He did not comprehend what the arrow connecting the stimulus (S) and the response (R) stood for. He never did figure it out. The traditional behaviorist, experimental approach to psychology had failed to spark his interest. He also explored psychoanalysis. He wrote, "I don't remember which one of Freud's books I was trying to read, but I do remember the mounting feeling of incredulity that anyone could write such nonsense, much less publish it" (1969, p. 47).

Kelly's professional training took a different turn in 1929 when he was awarded a fellowship at the University of Edinburgh, Scotland. During his year there, he earned a Bachelor of Education degree and developed an interest in psychology. He returned to the United States for doctoral studies at the State University of Iowa and received his Ph.D. in 1931.

An Intellectual Approach to Counseling

Kelly began his academic career at Fort Hays Kansas State College in the midst of the economic depression of the 1930s. There was little opportunity to conduct research in physiological psychology, the specialty in which he had trained, so he switched to clinical psychology for which there was a need. He developed a clinical psychology service for the local public school system and for the students at his college. He established traveling clinics, going from school to school, which gave him the opportunity to deal with a variety of problems and to try different approaches to treatment. Kelly was not committed to a particular therapeutic technique or to a specific theory about the nature of personality. He felt free to use traditional methods of assessment and treatment as well as those of his own design. His clinical experiences strongly influenced the nature of his personal construct theory. The people he treated were not severely disturbed psychotics in mental hospitals or neurotics with troublesome emotional problems. His patients were students who had been referred by their teachers for counseling.

Thus, unlike the emotionally maladjusted patients in a psychiatric ward or a psychoanalyst's office, Kelly's clients were much more capable of discussing their concerns rationally, of expressing their problems in intellectual terms, the level of functioning expected in an academic setting. In the classroom, we are taught to analyze, to think and process information logically. This intellectual attitude carried over from the classroom to the counseling situation. Had circumstances placed Kelly during his formative professional years at work with schizophrenics in a mental institution, his theory might not have depended so heavily on cognitive information processing abilities.

World War II interrupted Kelly's academic career. He joined the U.S. Navy and served as a psychologist in the Bureau of Medicine and Surgery in Washington, D.C. When the war ended in 1945, he taught for a year at the University of Maryland before joining the faculty of Ohio State University. There he spent 19 years teaching, refining his personality theory, and conducting research. Kelly also lectured at universities throughout the world about how his personal construct theory of personality could be used to resolve international tensions. In 1965, he accepted an appointment to an endowed chair at Brandeis University but died shortly thereafter. Kelly was a major force in the development of the clinical psychology profession during its rapid growth following World War II. He held several honored positions in the field, including the

presidencies of the Clinical and Consulting divisions of the American Psychological Association and the American Board of Examiners in Professional Psychology.

Personal Construct Theory

Kelly suggested that people perceive and organize their world of experiences the same way scientists do, by formulating hypotheses about the environment and testing them against the reality of daily life. In other words, we observe the events of our life—the facts or data of our experience—and interpret them in our own way. This personal interpreting, explaining, or *construing* of experience represents our unique view of events, the pattern within which we place them. Kelly said that we look at the world through “transparent patterns that fit over the realities of which the world is composed” (Kelly, 1955, pp. 8–9).

We might compare these patterns to sunglasses that add a particular tint or coloring to everything we see. One person’s glasses may have a bluish tint whereas another’s may have a greenish tint. Several people can look at the same scene and perceive it differently, depending on the tint of the lenses that frame their point of view. So it is with the hypotheses or patterns we construct to make sense of our world. This special view, the unique pattern created by each individual, is what Kelly called our *construct system*.

A **construct** is a person’s unique way of looking at life, an intellectual hypothesis devised to explain or interpret events. We behave in accordance with the expectation that our constructs will predict and explain the reality of our world. Like scientists, we constantly test these hypotheses. We base our behavior on our constructs, and we evaluate the effects.

Consider a student who is in danger of failing an introductory psychology course and is trying to persuade the professor to give a passing grade. After observing the professor for most of the semester, the student concludes that the professor behaves in a superior and authoritarian manner in class and has an inflated sense of personal importance. From this observation, the student forms the hypothesis, or construct, that acting to reinforce the professor’s exaggerated self-image will bring a favorable response.

The student tests this idea against reality. The student reads an article the professor has written and praises it to the professor. If the professor feels flattered and gives the student a good grade, then the student’s construct has been confirmed. It has been found to be useful and can be applied the next time the student takes a course with that professor or with any professor who behaves similarly. However, if the student receives a failing grade, then the construct was found to be inappropriate. A new one will be required for dealing with that professor. Over the course of life, we develop many constructs, one for almost every type of person or situation we encounter. We expand our inventory of constructs as we meet new people and face new situations. Further, we may alter or discard constructs periodically as situations change. Revising our constructs is a necessary and continuous process; we must always have an alternative construct to apply to a situation. If our constructs were inflexible and incapable of being revised (which is what would happen if personality was totally determined by childhood influences), then we would not be able to cope with new situations. Kelly called this adaptability

constructive alternativism to express the view that we are not controlled by our constructs but are free to revise or replace them with other alternatives.

Ways of Anticipating Life Events

Kelly's personal construct theory is presented in a scientific format, organized into a fundamental postulate and 11 corollaries (see Table 13.1). The fundamental postulate states that our *psychological processes are directed by the ways in which we anticipate events*. By using the word *processes*, Kelly was not suggesting some kind of internal mental energy. Rather, he believed that personality was a flowing, moving process. Our psychological processes are directed by our constructs, by the way each of us construes our world. Another key word in the fundamental postulate is *anticipate*. Kelly's notion of constructs is anticipatory. We use constructs to predict the future so that we have some idea of the consequences of our actions, of what is likely to occur if we behave in a certain way.

The Construction Corollary

Similarities among repeated events. Kelly believed no life event or experience could be reproduced exactly as it occurred the first time. An event can be repeated, but it will not be experienced in precisely the same way. For example, if you watch a movie today that you first saw last month, your experience of it will be different the second time. Your mood may not be the same, and during the elapsed month you were exposed to events that affected your attitudes and emotions. Maybe you read something unpleasant about an actor in the film. Or you may feel more content because your grades are improving.

However, although such repeated events are not experienced identically, recurrent features or themes will emerge. Some aspects of a situation will be similar to those experienced earlier. It is on the basis of these similarities that we predict or establish anticipations about how we will deal with that type of event in the future. Our predictions rest on the idea that future events, though they are not duplicates of past events, will nevertheless be similar. For example, some scenes in the movie probably affect you the same way every time.

<i>Construction</i>	Because repeated events are similar, we can predict or anticipate how we will experience such an event in the future.
<i>Individuality</i>	People perceive events in different ways.
<i>Organization</i>	We arrange our constructs in patterns, according to our view of their similarities and differences.
<i>Dichotomy</i>	Constructs are bipolar; for example, if we have an opinion about honesty, that idea must also include the concept of dishonesty.
<i>Choice</i>	We choose the alternative for each construct that works best for us, the one that allows us to predict the outcome of anticipated events.
<i>Range</i>	Our constructs may apply to many situations or people, or they may be limited to a single person or situation.
<i>Experience</i>	We continually test our constructs against life's experiences to make sure they remain useful.
<i>Modulation</i>	We may modify our constructs as a function of new experiences.
<i>Fragmentation</i>	We may sometimes have contradictory or inconsistent subordinate constructs within our overall construct system.
<i>Commonality</i>	Although our individual constructs are unique to us, people in compatible groups or cultures may hold similar constructs.
<i>Sociality</i>	We try to understand how other people think and predict what they will do, and we modify our behavior accordingly.

If you liked the car chase scenes the first time, you will probably like them again. You base your behavior on your anticipation of liking the chases, so that explains why you choose to watch the film again. Themes of the past reappear in the future, and we formulate our constructs on the basis of these recurring themes.

The Individuality Corollary - Individual differences in interpreting events

With this corollary, Kelly introduced the notion of individual differences. He pointed out that people differ from one another in how they perceive or interpret an event. Because of construing events differently, people form different constructs. Our constructs do not so much reflect the objective reality of an event as they constitute the unique interpretation each of us places on it.

The Organization Corollary - Relationships among constructs

We organize our individual constructs into a pattern according to our view of their interrelationships, that is, their similarities and differences. People who hold similar constructs may still differ from one another if they organize those constructs in different patterns. Typically, we organize our constructs into a hierarchy, with some constructs subordinate to others. A construct can include one or more subordinate constructs. For example, the construct *good* may include among its subordinates the constructs *intelligent* and *moral*. Thus, if we meet someone who fits our idea of a good person, we anticipate that he or she will also have the attributes of intelligence and high moral standards. The relationships among constructs are usually more enduring than the specific constructs themselves, but they, too, are open to change. A person who feels insulted by someone who appears more intelligent may switch the construct *intelligent* from a subordinate place under the construct *good* to a place under the construct *bad*. The only valid test for a construct system is its predictive efficiency. If the organization of our constructs no longer provides a useful way to predict events, we will modify it.

The Dichotomy Corollary Two mutually exclusive alternatives

All constructs are bipolar or dichotomous. This is necessary if we are to anticipate future events correctly. Just as we note similarities among people or events, we must also account for dissimilarities. For example, it is not enough to have a construct about a friend that describes the personal characteristic of *honesty*. We must also consider the opposite, *dishonesty*, to explain how the honest person differs from someone who is not honest. If we did not make this distinction—if we assumed that all people are honest—then forming a construct about honesty would not help us anticipate or predict anything about people we might meet in the future. A person can be expected to be honest only in contrast to someone who is expected to be dishonest. The appropriate personal construct in this example, then, is *honest versus dishonest*. Our constructs must always be framed in terms of a pair of mutually exclusive alternatives.

The Choice Corollary Freedom of choice

The notion that people have freedom of choice is found throughout Kelly's writings. According to the dichotomy corollary described above, each construct has two opposing poles. For every

situation we must choose the alternative that works best for us, the one that allows us to anticipate or predict the outcome of future events.

Kelly suggested that we have some latitude in deciding between the alternatives, and he described it as a choice between security and adventure. Suppose you must decide which of two courses to take next semester. One is easy because it is not much different from a course you've already taken and is taught by a professor known to give high grades for little work. There is virtually no risk involved in choosing that course, but there may not be much reward either. You know the professor is dull, and you have already studied much of the course material. However, it is the secure choice, because you can make a highly accurate prediction about the consequences of deciding to take it.

The other course is more of a gamble. The professor is new and rumored to be tough, and you don't know much about the subject. It would expose you to a field of study you've been curious about. In this case, you cannot make an accurate prediction about the outcome of your choice. This more adventurous alternative means more risk, but the potential reward and satisfaction are greater.

You must choose between the low-risk, minimal-reward secure option and the high-risk, high-reward adventurous option. The first has a high predictive efficiency, the second a lower predictive efficiency. Kelly believed we face such choices throughout life, choices between defining or extending our personal construct system. The secure choice, which is similar to past choices, further defines our construct system by repeating experiences and events. The more adventurous choice extends our construct system by encompassing new experiences and events. The popular tendency to opt for the secure, low-risk alternative may explain why some people persist in behaving in an unrewarding way. For example, why does someone act aggressively toward other people even when continually rebuffed? Kelly's answer was that the person is making the low-risk choice because he or she has come to know what to expect from others in response to aggressive behavior. The hostile person does not know how people will react to friendliness because he or she has rarely tried it. The potential rewards may be greater for friendly behavior but so is the uncertainty for this person.

Remember that our choices are made in terms of how well they allow us to anticipate or predict events, not necessarily in terms of what is best for us. And it is Kelly's contention that each of us, in the best scientific tradition, desires to predict the future with the highest possible degree of certainty.

The Range Corollary – The range of convenience

Few personal constructs are appropriate or relevant for all situations. Consider the construct *tall versus short*, which obviously has a limited **range of convenience** or applicability. It can be useful with respect to buildings, trees, or basketball players, but it is of no value in describing a pizza or the weather. Some constructs can be applied to many situations or people, whereas others are more limited, perhaps appropriate for one person or situation. The range of convenience or relevance for a construct is a matter of personal choice. For example, we may believe that the construct *loyal versus disloyal* applies to everyone we meet or only to our family

members or to our pet dog. According to Kelly, if we are to understand personality fully, it is just as important to know what is excluded from a construct's range of convenience as it is to know what is included.

The Experience Corollary – Exposure to new experiences

We have said that each construct is a hypothesis generated on the basis of past experience to predict or anticipate future events. Each construct is then tested against reality by determining how well it predicted a given event. Most of us are exposed to new experiences daily, so the process of testing the fit of a construct to see how well it predicted the event is ongoing. If a construct is not a valid predictor of the outcome of the situation, then it must be reformulated or replaced. Thus, we evaluate and reinterpret our constructs as our environment changes. Constructs that worked for us at age 16 may be useless, or even harmful, at age 40. In the intervening years, our experiences will have led us to revise our construct system. If you never have any new experiences, then your construct system would never have to change. But for most of us, life involves meeting new people and coping with new challenges. Therefore, we must reconstrue our experiences and constructs accordingly.

The Modulation Corollary – Adapting to new experiences

Constructs differ in their **permeability**. To permeate means to penetrate or pass through something. A permeable construct is one that allows new elements to penetrate or be admitted to the range of convenience. Such a construct is open to new events and experiences and is capable of being revised or extended by them.

How much our construct system can be modulated, or adjusted, as a function of new experience and learning depends on the permeability of the individual constructs. An impermeable or rigid construct is not capable of being changed, no matter what our experiences tell us.

For example, if a bigoted person applies the construct *high intelligence versus low intelligence* in a fixed or impermeable way to people of a certain ethnic minority group, believing that all members of this group have low intelligence, then new experiences will not penetrate or alter this belief. The prejudiced person will not modify that construct, no matter how many highly intelligent people of that ethnic group he or she meets. The construct is a barrier to learning and to new ideas.

The Fragmentation Corollary Competition among constructs

Kelly believed that within our construct system some individual constructs might be incompatible, even though they coexist within the overall pattern. Recall that our construct system may change as we evaluate new experiences. However, new constructs do not necessarily derive from old ones. A new construct may be compatible or consistent with an old one in a given situation, but if the situation changes, then these constructs can become inconsistent. Consider the following situation. A man meets a woman in a psychology class and decides that he is attracted to her. She is also a psychology major, and her interests seem similar to his. She fits the *friend* alternative of the construct *friend versus enemy*. Thus, she is someone to be liked

and respected. He sees her the next day at a political rally and is disappointed to find her loudly expressing conservative views that are the opposite of his own liberal opinions. Now she also fits the opposite alternative of the construct. She has become the *enemy*.

This inconsistency in the man's construct about this woman is at a subordinate level in his overall construct system. In one situation she is a friend, and in another situation she is an enemy. However, his broader construct, that liberals are friends and conservatives are enemies, remains undisturbed. According to Kelly, this is the process by which we tolerate subordinate inconsistencies without damaging our overall construct system.

The Commonality Corollary Similarities among people in interpreting events

Because people differ in the ways they construe events, each person develops unique constructs. However, people also show similarities in their ways of construing events. Kelly suggested that if several people construe an experience similarly, we can conclude that their cognitive processes are similar. Consider a group of people with the same cultural norms and ideals. Their anticipations and expectations of one another will have much in common and they will construe many of their experiences in the same way. People from the same culture may show a resemblance in their behaviors and characteristics even though they are exposed to different life events.

The Sociality Corollary Interpersonal relationships

We noted above that people in the same culture tend to construe events similarly. Although this accounts for some commonalities among people, it does not in itself bring about positive social relationships. It is not enough for one person to construe or interpret experiences in the same way as another person. The first person must also construe the other person's constructs. In other words, we must understand how another person thinks if we are to anticipate how that person will predict events.

Construing another person's constructs is something we do routinely. Think about driving a car. We stake our lives on being able to anticipate what the other drivers on the road will do. It is only when we can predict with some certainty what drivers, friends, bosses, or teachers will do that we can adjust our behaviors to theirs. And while we are adapting to them, they are doing the same to us. Each person assumes a role with respect to others. We play one role with a partner, another with a child, another with our supervisor at work. Each role is a behaviour pattern that evolves from understanding how the other person construes events. In a sense, then, we fit ourselves into the other person's constructs.

Questions About Human Nature

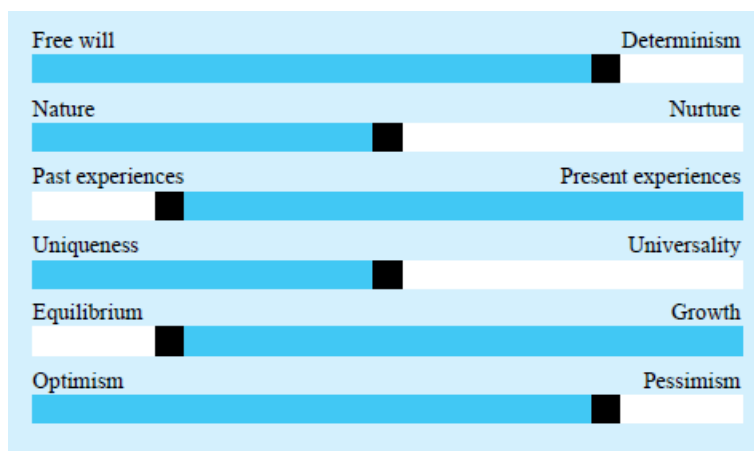
Kelly's personality theory presents an optimistic, even flattering, image of human nature (Kelly, 1969). Kelly treated people as rational beings capable of forming a framework of constructs through which to view the world. He believed we are the authors, not the victims, of our destiny. His view endows us with free will, the ability to choose the direction our life will take, and we are able to change when necessary by revising old constructs and forming new ones. We are not

committed to a path laid down in childhood or adolescence. Our direction is clearly toward the future because we formulate constructs to predict or anticipate events (see Figure).

Thus, Kelly did not accept historical determinism. He did not consider past events to be the determinants of present behavior. We are not prisoners of toilet training, early sex experiences, or parental rejection, nor are we bound by biological instincts or unconscious forces. We need no push from internal drives or needs because we are motivated by the fact of being alive. Kelly saw no reason to invoke any other explanation.

Although Kelly did not discuss the role of heredity in personality, he noted that we are not totally determined by environmental influences. We live by constructs based on our interpretation of events. Therefore, it is the operation of our rational mental processes and not the specific events that influence the formation of personality.

Kelly did not posit an ultimate and necessary life goal, but we may infer that our goal is to establish a construct system that enables us to predict events. On the question of uniqueness versus universality, Kelly took a moderate position. The commonality corollary states that people in the same culture develop similar constructs, whereas the individuality corollary emphasizes the uniqueness of many of our constructs and therefore of the self.



Assessment in Kelly's Theory The Interview

Kelly's primary assessment technique was the interview. He wrote, "If you don't know what is going on in a person's mind, ask him; he may tell you!" (1958, p. 330). Adopting what he called a "credulous attitude," Kelly accepted the client's words at face value, believing this was the best way to determine the person's constructs. He also recognized that a person might deliberately lie or distort the reported version of events. However, what the client said must be respected, even if not fully believed.

Self-Characterization Sketches

Another technique used to assess a construct system is to have the person write a **self-characterization sketch**. Kelly's instructions to the client were as follows. "I want you to write a character sketch of [client's name] just as if he were the principal character in a play. Write it as it might be written by a friend who knew him very intimately and very sympathetically, perhaps better than anyone ever really could know him" (1955, p. 323). Kelly found this technique useful for learning how clients perceive themselves in relation to other people.

The Role Construct Repertory Test

Kelly devised the Role Construct Repertory (REP) Test to uncover the constructs we apply to the important people in our lives. The client is asked to list by name the people who have played a significant role in his or her life such as mother, father, spouse, closest friend, and the most intelligent or interesting person he or she knows (see Table 13.2). The names are sorted, three at a time, and clients are asked to select from each group of three the two people who are most alike, noting how they differ from the third. For example, the client may be given the names of most threatening person, successful person, and attractive person and must describe how any two of them are similar in some aspect of behavior or character and how they differ from the other. This information is presented in a diagram called a repertory grid (see Figure).

For each row the client judges the three people indicated by the circles and formulates a construct about them, such as *happy versus sad*. The client writes a word or phrase that describes two of them in the column labeled *Emergent Pole* (in our example, the word *happy*). The client writes the opposite word (*sad*) to describe the third person in the group in the column labeled *Implicit Pole*. The client places a check mark in the squares of anyone else in the grid who shares the *Emergent Pole* characteristics, in this case, anyone significant in the client's life who could be described as happy. The assumption underlying the REP Test is that people construe events in dichotomies, according to the dichotomy corollary, in terms of like versus unlike or similar versus dissimilar. By forcing clients to make repeated judgments about their social relationships, Kelly believed he could uncover their anticipations and expectations. The dichotomies or alternatives by which we guide our life will show the pattern of our personal constructs.

The REP Test has no objective scoring procedures. Its interpretation depends on the skill and training of the psychologist who administers it. Kelly did not intend the test to be a standardized, objective self-report inventory. He designed it as a way to assess constructs as a necessary stage in psychotherapy, to induce clients to reveal the constructs by which they organize their world. However, computer programs have since been developed to analyze individual repertory grids.

Fixed Role Therapy

After assessing a client's system of personal constructs, Kelly attempted to bring about a change in undesirable or ineffective constructs. He promoted a form of psychotherapy he called **fixed role therapy**. To help clients formulate new constructs and discard old ones, he asked them to write a self-characterization sketch describing themselves as the lead character in a play. In fixed role therapy, the therapist prepares a fixed role sketch containing constructs that differ from the client's negative self-perceptions as revealed in the self characterization sketch. The client is told

that the fixed role sketch is about a fictitious character and is asked to act out that character in the therapist's office and later in everyday life. Through this role-playing the client is expected to project personal needs and values onto the fictitious character. The therapist expects the client to discover that the new constructs in the fixed role sketch work better in anticipating events than do the old constructs by which the client was living. Once the client realizes this, he or she can incorporate the new constructs into the overall construct system and function in a more satisfying and effective way. Kelly developed fixed role therapy from observing a friend who began to live the role he was playing in a college dramatic production. The friend was so strongly influenced by the part that his behavior offstage gradually became more and more like the character. This example shows the intent of fixed role therapy: first to play a role and then to come to live it. Consider the following example. Based on interviews with a male client, his written self-characterization sketch, and his REP Test results, the therapist concluded that the client was overly concerned with finding a female companion. His efforts were having a negative impact on his other social relationships. The client had difficulty being open and assertive because in his construct system assertiveness and extraversion were negative personality characteristics. Yet in dealing with other people, he was convinced that his opinions were the correct ones and that everybody else was wrong. At work, he felt isolated, believing he belonged to a higher social class than his colleagues.

The therapist's fixed role sketch for this client made no mention of the client's desire to have an intimate relationship with a woman. Instead, taking as a framework the client's skill at tennis, the therapist encouraged the client, through the fictitious character, to be more curious about and tolerant of different kinds of people and their views (Winter, 1992, pp. 270–271).

The therapist reviewed the fixed role sketch with the client and asked whether the character seemed like someone that the client might want to know. The client agreed to try behaving like the character in the sketch while in the therapist's office.

He was asked to try acting, thinking, and talking like the character for the next two weeks. Behavioral changes instilled by fixed role therapy are reported to last far beyond the two-week role-playing period. However, positive case reports on treatment outcomes for individual clients must be balanced by the fact that there has been little controlled research on the technique's effectiveness.

Research in Kelly's Theory

Studies using the REP Test have shown that a person's constructs remain stable over time. One group of research participants took the test twice, using the names of different people as role figures each time. Although the role models changed, the constructs that were important to the research participants remained the same. However, research has shown that the validity of the REP test depends heavily on the skill of the psychologist interpreting the results.

One REP Test study investigated the complexity of a person's construct system. The results showed that the pattern becomes increasingly differentiated and integrated over the life span and can process more information as it is able to function in more abstract terms (Crockett, 1982). Another study suggested that forming friendships depends on a similarity of personal constructs.

A group of students took the REP Test during their first week at college and again 6 months later. The data showed that the similarity in constructs or attitudes among friends did not develop during the 6-month period but had existed before the relationships were formed. The researchers concluded that we seek as friends those people whose constructs are already similar to ours (Duck & Spencer, 1972). Also, for married research participants, spouses whose constructs were more alike reported greater happiness with their marriage than did couples whose constructs were more unlike (Neimeyer, 1984).

Other research showed a correspondence between one's personal characteristics and the ways of construing other people. Among a group of student nurses, those identified as highly anxious tended to use *anxious versus nonanxious* as a construct for evaluating others. Those who were judged by peers as friendly tended to view others in terms of a *friendly versus unfriendly* construct (Sechrest, 1968).

The REP Test has been used to study schizophrenics, neurotics, depressives, and persons with organic brain damage. Compared with normal research participants, schizophrenics were found to be unstable and inconsistent in construing other people. However, their construing of objects was stable and consistent, suggesting that their thought disorders applied only to social situations. Their thought processes were also characterized by paranoid delusions and irrational links between constructs (Bannister, Fransella, & Agnew, 1971; Bannister & Salmon, 1966; Winter, 1992).

A study using a modified version of the REP Test compared the personal construct systems of repeat patients in psychiatric hospitals with persons hospitalized for the first time. The repeat patients construed their social network as small, limited to a few people on whom they believed they could depend. First-time patients construed their social network as significantly larger (Smith, Stefan, Kovalski, & Johnson, 1991). REP Test research with juvenile and adult offenders revealed that delinquents tended to identify with action-oriented television heroes rather than with real adults.

Newly released prisoners showed poor self-esteem and lowered aspirations for the future. Rapists felt inadequate, immature, and preoccupied with personal failure (Needs, 1988). Researchers have applied the REP Test in market research to assess the criteria consumers use to evaluate products. Industrial-organizational psychologists have used the REP Test for vocational counseling, employee selection, job performance evaluation, and evaluation of training programs.

Cognitive Complexity and Cognitive Simplicity

An outgrowth of Kelly's work on personal constructs relates to cognitive styles, that is, differences in how we perceive or construe the persons, objects, and situations in our environment. Research on cognitive styles was derived from the REP Test and focuses on the concept of **cognitive complexity**.

A person's degree of cognitive complexity can be determined from the pattern of Xs on the repertory grid. A highly differentiated pattern of Xs indicates cognitive complexity, defined as

the ability to discriminate in the process of applying personal constructs to other people. People high in cognitive complexity are able to see variety among people and can easily place a person in many categories. The other extreme, **cognitive simplicity**, applies when the pattern of Xs on the repertory grid is the same or highly similar for each construct. This indicates that the person is less capable of perceiving differences when judging other people. Persons high in cognitive simplicity are likely to place others in only one or two categories, unable to see much variety. Research has confirmed personality differences in terms of cognitive style. People high in cognitive complexity are better able to make predictions about other people's behavior. They more readily recognize differences between themselves and others, are more empathic, and deal better with inconsistent information in construing others than do people high in cognitive simplicity (Crockett, 1982). Studies of politicians in the United States and England found that conservatives were high in cognitive simplicity, whereas moderates and liberals displayed higher levels of cognitive complexity (Tetlock, 1983, 1984).

In Kelly's theory, cognitive complexity is the more desirable and useful cognitive style. Our goal in developing a construct system is to reduce uncertainty by being able to predict or anticipate what people will do. This gives us a guide for our own behavior. People with a more complex cognitive style will be more successful at this task than will people with a simpler cognitive style. Therefore, cognitive style is an important dimension of personality. Studies show that cognitive complexity increases with age in that adults generally possess greater cognitive complexity than children do. However, age is not a complete explanation for cognitive complexity; many adults still possess cognitive simplicity. Much depends on the level of complexity of our childhood experiences. Adults high in cognitive complexity typically had more diverse experiences in childhood. Their parents were less authoritarian and more likely to grant autonomy than were parents of adults high in cognitive simplicity (Sechrest & Jackson, 1961).

A study of 40 couples found that although the women scored significantly higher in cognitive complexity than the men did, there was a high correlation in cognitive complexity between men and women who were partners. The researcher suggested that these partners may have chosen each other because of their similar pre-existing levels of cognitive complexity, or else they developed this similarity as a result of living together. Either way, these partners tended to construe their worlds in a similar manner (Adams-Webber, 2001).

Reflections on Kelly's Theory

Kelly developed a unique personality theory that did not derive from or build on other theories. It emerged from his interpretation, his own construct system, of data provided by his clinical practice. It is a personal view, and its originality parallels its message, that we are capable of developing the framework for our life. Kelly's system has been criticized on several points. It focuses on intellectual and rational aspects of human functioning to the exclusion of emotional aspects. Kelly's image of a person rationally constructing the present and future, forming and testing hypotheses, and making predictions as the basis for behavior does not coincide with the everyday experiences of clinical psychologists who see more extreme examples of human behavior. Kelly's rational being seems to be an ideal that exists in the abstract but not in reality.

Although Kelly did not deal explicitly with emotions, he recognized them as personal constructs, similar in their formation to other constructs.

We noted that Sigmund Freud's view of personality derived from his exposure to neurotic, middle-class Viennese patients, who presented him with a distorted, unrepresentative sample of human nature. Other theorists have been similarly criticized. Kelly's viewpoint was also unrepresentative, limited largely to Midwestern young adults in the process of defining a construct system that would help them cope with college life.

Kelly's theory, like many others, leaves unanswered questions. Each of us is able to construe events in a unique way, but why does one person construe an event in one way while another person construes the same event in a different way? What process or mechanism accounts for the difference? A person makes choices about defining or extending the construct system. What determines whether to opt for security or for adventure, for the safer or the riskier alternative?

Personal construct theory has gained a wider acceptance in Europe, Canada, and Australia than in the United States. In the mid-1980s, the Centre for Personal Construct Psychology was established in England to train clinicians in Kelly's psychotherapeutic techniques and to promote applications of the theory. The *International Journal of Personal Construct Psychology* and the *Journal of Constructivist Psychology* began publication in the late 1980s, and in 1990 the first volume of the series *Advances in Personal Construct Psychology* appeared. Kelly's work is not as popular in the United States for several reasons. First, many psychologists see it as too different from prevailing ideas. Personality psychologists typically think in terms of the familiar concepts of motivation and emotion, unconscious forces, drives, and needs, which form no part of Kelly's system. Second, Kelly published few books, articles, or case studies, devoting most of his time to clinical work and to training graduate students. The writing style of his two major books is scholarly, not intended for the public or for the therapist seeking explanations of human passions and emotions, loves and hatreds, fears and dreams. Such was not the style of the man or his theory.

Kelly recognized the limitations of his program and made no pretense of setting forth a finished theory. Just as an individual's constructs change in light of new experiences, so Kelly expected the personal construct theory to change with further research and application. His contributions have been recognized with honors from the profession and from former students, and his theory is one of the most unusual to appear in a century of theorizing about the nature of the human personality.

4.7 Rotter and Witkins

UNIT V: HUMANISTIC APPROACHES

Need Theories:

5.1 McClelland

5.2 Atkinson

5.3 Murray

Humanistic Theories:

5.4 Rogers

5.5 Maslow

The Life of Maslow (1908–1970) Inferiority Feelings and Compensation

The oldest of seven children, Abraham Maslow was born in 1908 in Brooklyn, New York. His parents were immigrants with little education and few prospects for rising above their marginal economic circumstances. At the age of 14, Maslow's father had walked and hitchhiked from Russia across western Europe, so great was his ambition to reach the United States. The elder Maslow instilled in his son this intense drive to succeed.

Maslow's childhood was difficult. He told an interviewer, "with my childhood, it's a wonder I'm not psychotic" (quoted in Hall, 1968, p. 37). In a statement uncovered in his unpublished papers, years after his death, Maslow had written, "My family was a miserable family and my mother was a horrible creature" (quoted in Hoffman, 1996, p. 2). Isolated and unhappy, he grew up without close friends or loving parents. His father was aloof and periodically abandoned his unhappy marriage.

Maslow said that his father "loved whiskey and women and fighting" (quoted in Wilson, 1972, p. 131). Eventually Maslow reconciled with his father but as a child and adolescent felt only hostility toward him. Maslow's relationship with his mother was worse. A biographer reported that Maslow "grew to maturity with an unrelieved hatred toward [her] and he never achieved the slightest reconciliation" (Hoffman, 1988, p. 7). She was superstitious and would quickly punish Maslow for the slightest wrongdoing. She announced that God would retaliate for his misbehavior. Unaffectionate and rejecting of him, she openly favored the younger siblings. When Maslow brought home two stray kittens, his mother killed them, bashing their heads against a wall. Maslow never forgave her treatment of him, and when she died, he refused to attend her funeral. The experience affected not only his emotional life but also his work in psychology. "The whole thrust of my life-philosophy, and all my research and theorizing . . . has its roots in a hatred for and revulsion against everything she stood for" (Maslow quoted in Hoffman, 1988, p. 9).

As a child, Maslow believed he was different from others. Embarrassed about his scrawny physique and large nose, he remembered his teenage years as marked by a huge inferiority complex. "I was all alone in the world," Maslow told an interviewer.

“I felt peculiar. This was really in my blood, a very profound feeling that somehow I was wrong. Never any feelings that I was superior. Just one big aching inferiority complex” (quoted in Milton, 2002, p. 42). Elsewhere he had written, “I tried to compensate for what I felt was a great [physical] lack by forcing my development in the direction of athletic achievements” (quoted in Hoffman, 1988, p. 13). Thus, the man who would later become interested in Alfred Adler’s work was in many ways a living example of Adler’s concept of compensation for inferiority feelings. When Maslow’s early attempts at compensation to achieve recognition and acceptance as an athlete did not succeed, he turned to books. The library became the playground of his childhood and adolescence, and reading and education marked the road out of the ghetto of poverty and loneliness. Maslow’s early memories are significant because they indicate the style of life—the life of scholarship—he would fashion for himself. He recalled going to the neighborhood library early in the morning and waiting on the steps until the doors opened. He typically arrived at school an hour before classes began, and his teacher would let him sit in an empty classroom, reading the books she had loaned him. Although his grades remained mediocre, they were sufficient to gain him acceptance at City College of New York. He failed a course during his first semester and by the end of his freshman year was on academic probation, but with persistence his grades improved. He began the study of law, at his father’s request, but decided after two weeks that he did not like it. What he really wanted to do was study *everything*.

From Monkeys to Self-Actualization

Maslow’s desire for learning was matched by a passion for his cousin Bertha. He soon left home, first for Cornell University and then for the University of Wisconsin, where she joined him. He was 20 and she was 19 when they married. The union provided Maslow with a feeling of belonging and a sense of direction. He later said that life had little meaning until he married Bertha and began his studies at Wisconsin. Earlier, at Cornell, he had enrolled in a psychology course and pronounced that he found it “awful and bloodless.” It had “nothing to do with people, so I shuddered and turned away from it” (quoted in Hoffman, 1988, p. 26). At Wisconsin, however, he found the behavioristic psychology of John B. Watson, leader of the revolution to make psychology a science of behavior. Like many people in the early 1930s, Maslow became enraptured, believing that behaviorism could solve all the world’s problems. His training in experimental psychology included work on dominance and sexual behavior in primates. So obviously it was a giant step from this type of research in the behavioristic framework to the ideas of humanistic psychology—from monkeys to self-actualization.

Several influences brought about this profound shift in his thinking. He read the works of Freud, the Gestalt psychologists, and the philosophers Alfred North Whitehead and Henri Bergson. He was deeply affected by the onset of World War II and by the birth of his first child. About the baby he said, “I was stunned by the mystery and by the sense of not really being in control. I felt small and weak and feeble before all this. I’d say anyone who had a baby couldn’t be a behaviorist” (quoted in Hall, 1968, p. 56).

Maslow received his Ph.D. from the University of Wisconsin in 1934 and returned to New York, first for a postdoctoral fellowship under E. L. Thorndike at Columbia University, and later to teach at Brooklyn College, where he remained until 1951. Maslow took several intelligence and scholastic aptitude tests, scoring an IQ of 195, which Thorndike described as within the genius range. At first Maslow was surprised, but soon he accepted the revelation and thereafter considered it a triumph and frequently managed to work the information into social conversations. Teaching in New York in the late 1930s and early 1940s, Maslow had the opportunity to meet the wave of emigrant intellectuals fleeing Nazi Germany, including Erich

Fromm, Karen Horney, and Alfred Adler. Maslow “talked about Adler all the time and was tremendously excited by his theories” recalled Bertha Maslow (quoted in Hoffman, 1988, p. 304). He also met the Gestalt psychologist Max Wertheimer and the American anthropologist Ruth Benedict. His admiration for Wertheimer and Benedict kindled his ideas about self-actualization.

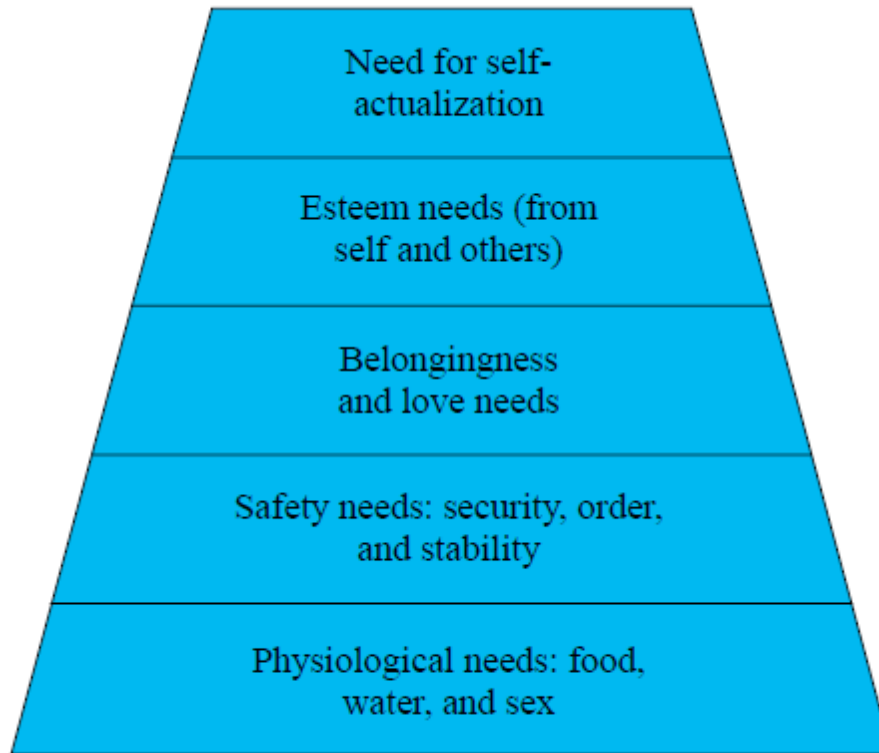
In 1941, Maslow witnessed a parade shortly after Japan’s surprise attack on the American naval base at Pearl Harbor in Hawaii, precipitating the onset of U.S. involvement in World War II. The experience changed his life. He resolved to devote himself to developing a psychology that would deal with the highest human ideals. He would work to improve the human personality and to demonstrate that people are capable of displaying better behaviors than prejudice, hatred, and aggression.

From 1951 to 1969, Maslow taught at Brandeis University in Massachusetts. A foundation grant enabled him to move to California to work on his philosophy of politics, economics, and ethics based on a humanistic psychology. He became an immensely popular figure in psychology and among the general public. He received many awards and honors and was elected president of the American Psychological Association in 1967. At the peak of his fame, Maslow developed a variety of ailments including stomach disorders, insomnia, depression, and heart disease. In the face of these growing physical limitations, he pushed himself to work even harder to accomplish his goal of humanizing psychology. “I find myself getting narrow,” he said in a 1968 interview. “I’ve given up plays and poetry and making new friends. . . . I love my work so much, and am so absorbed with it, that everything else starts to look smaller and smaller” (quoted in Frick, 2000, p. 135).

Maslow died in 1970 of a massive heart attack, which he suffered while jogging around his swimming pool, an exercise that had been recommended by his cardiologist.

Personality Development: The Hierarchy of Needs

Maslow proposed a **hierarchy of five innate needs** that activate and direct human behavior (Maslow, 1968, 1970b). They are the physiological, safety, belongingness and love, esteem, and self-actualization needs (see Figure 11.1). Maslow described these needs as **instinctoid**, by which he meant that they have a hereditary component. However, these needs can be affected or overridden by learning, social expectations, and fear of disapproval. Although we come equipped with these needs at birth, the behaviors we use to satisfy them are learned and therefore subject to variation from one person to another. The needs are arranged in order from strongest to weakest. Lower needs must be at least partially satisfied before higher needs become influential. For example, hungry people feel no urge to satisfy the higher need for esteem. They are preoccupied with satisfying the physiological need for food, not with obtaining approval and esteem from other people. It is only



when people have adequate food and shelter, and when the rest of the lower needs are satisfied, that they are motivated by needs that rank higher in the hierarchy. Thus, we are not driven by all the needs at the same time. In general, only one need will dominate our personality. Which one it will be depends on which of the others have been satisfied. People who are successful in their careers are no longer driven by, or even aware of, their physiological and safety needs. These needs have been amply taken care of. Successful people are more likely to be motivated by the needs for esteem or self-actualization. However, Maslow suggested that the order of the needs can be changed. If an economic recession causes some people to lose their jobs, the safety and physiological needs may reassume priority. Being able to pay the mortgage becomes more prized than popularity with colleagues or an award from a civic organization.

Characteristics of Needs

Maslow described several characteristics of needs.

_ The lower the need is in the hierarchy, the greater are its strength, potency, and priority. The higher needs are weaker needs.

_ Higher needs appear later in life. Physiological and safety needs arise in infancy. Belongingness and esteem needs arise in adolescence. The need for self-actualization does not arise until midlife.

_ Because higher needs are less necessary for actual survival, their gratification can be postponed. Failure to satisfy a higher need does not produce a crisis. Failure to satisfy a lower need does produce a crisis. For this reason, Maslow called lower needs **deficit**, or **deficiency, needs**; failure to satisfy them produces a deficit or lack in the individual.

_ Although higher needs are less necessary for survival, they contribute to survival and growth. Satisfaction of higher needs leads to improved health and longevity. For this reason, Maslow called higher needs **growth**, or **being, needs**.

- _ Satisfaction of higher needs is also beneficial psychologically. Satisfaction of higher needs leads to contentment, happiness, and fulfillment.
- _ Gratification of higher needs requires better external circumstances (social, economic, and political) than does gratification of lower needs. For example, pursuing self-actualization requires greater freedom of expression and opportunity than pursuing safety needs.
- _ A need does not have to be satisfied fully before the next need in the hierarchy becomes important. Maslow proposed a declining percentage of satisfaction for each need. Offering a hypothetical example, he described a person who satisfied, in turn, 85 percent of the physiological needs, 70 percent of the safety needs, 50 percent of the belongingness and love needs, 40 percent of the esteem needs, and 10 percent of the self-actualization need.

Physiological Needs

If you have ever been swimming and had to struggle for air while underwater, or if you have gone too long without eating, you may have realized how trivial the needs for love or esteem or anything else can be when your body is experiencing a physiological deficiency. As we noted, a starving person craves only food. But once that need is satisfied, the person is no longer driven by it. The need ceases to direct or control behavior.

This describes the situation for most people in an affluent, industrialized culture. It is rare for middle-class Americans to be concerned with satisfying their survival needs. Physiological needs have a greater personal impact as motivating forces in cultures where basic survival remains an everyday concern. Because a need that has been gratified no longer serves to motivate behavior, the physiological needs play a minimal role for most of us.

Safety Needs

Maslow believed that the needs for safety and security typically are important drives for infants and neurotic adults. Emotionally healthy adults have usually satisfied their safety needs, a condition that requires stability, security, and freedom from fear and anxiety. For infants and children, the safety needs can be seen clearly in their behavior because youngsters react visibly and immediately to any threat to their security.

Adults have learned ways to inhibit their reactions to dangerous situations. Another visible indication of children's safety needs is their preference for a structure or routine, for an orderly and predictable world. Too much freedom and permissiveness leads to an absence of structure and order. This situation is likely to produce anxiety and insecurity in children because it threatens their security. Some measure of freedom must be granted to children, but only within the limits of their capacity to cope. This freedom must be offered with guidance because children are not yet capable of directing their own behavior and realizing the consequences. Neurotic and insecure adults also need structure and order because their safety needs still dominate their personality. Neurotics compulsively avoid new experiences. They arrange their world to make it predictable, budgeting their time and organizing their possessions. Pencils must be kept in a certain drawer, and shirts hung in the closet facing the same direction.

Maslow pointed out that although most normal adults have satisfied the safety needs, those needs may still have an impact on behavior. Many of us choose the predictable over the unknown; we prefer order to chaos. That is why we save for the future, buy insurance, and opt to remain in a secure job rather than risk a new venture. However, the safety needs are not as overwhelming a driving force for normal adults as they are for children or neurotics.

Belongingness and Love Needs

Once our physiological and safety needs have been reasonably well satisfied, we attend to the needs for belongingness and love. These needs can be expressed through a close relationship

with a friend, lover, or mate, or through social relationships formed within a group. The need to belong has grown more difficult to satisfy in our increasingly mobile society. Few of us live in the neighborhood where we grew up and keep friends from our early schooldays. We change schools, jobs, and communities too frequently to put down roots, to develop a secure sense of belonging. Many of us attempt to satisfy the need to belong in other ways, such as joining a church or a club, enrolling in a class, or volunteering for a service organization. The need to give and receive love can be satisfied in an intimate relationship with another person. Maslow did not equate love with sex, which is a physiological need, but he recognized that sex is one way of expressing the love need. He suggested that the failure to satisfy the need for love is a fundamental cause of emotional maladjustment.

Esteem Needs

Once we feel loved and have a sense of belonging, we may find ourselves driven by two forms of the need for esteem. We require esteem and respect from ourselves, in the form of feelings of self-worth, and from other people, in the form of status, recognition, or social success. Satisfaction of the need for self-esteem allows us to feel confident of our strength, worth, and adequacy, which will help us become more competent and productive in all aspects of our life. When we lack self-esteem, we feel inferior, helpless, and discouraged with little confidence in our ability to cope.

The Self-Actualization Need

The highest need in Maslow's hierarchy, **self-actualization**, depends on the maximum realization and fulfillment of our potentials, talents, and abilities. Although a person may satisfy all the other needs in the hierarchy, if that person is not self-actualizing, he or she will be restless, frustrated, and discontent. Maslow wrote, "A musician must make music, an artist must paint, a poet must write . . . to be ultimately at peace" (1970b, p. 46).

The self-actualizing process may take many forms, but each person, regardless of occupation or interests, is capable of maximizing personal abilities and reaching the fullest personality development. Self-actualization is not limited to creative and intellectual superstars such as musicians, artists, and astrophysicists. What is important is to fulfill one's own potentials at the highest level possible, whatever one's chosen endeavor. Maslow put it this way, "A first-rate soup is more creative than a second-rate painting . . . cooking or parenthood or making a home could be creative, while poetry need not be" (1987, p. 159).

The following conditions are necessary in order for us to satisfy the selfactualization need:

We must be free of constraints imposed by society and by ourselves.

We must not be distracted by the lower-order needs.

We must be secure in our self-image and in our relationships with other people;
we must be able to love and be loved in return.

We must have a realistic knowledge of our strengths and weaknesses, virtues and vices.

Although the hierarchy of needs Maslow proposed applies to most of us, there can be exceptions. Some people dedicate their lives to an ideal and willingly sacrifice everything for their cause. People have been known to fast until death in the service of their beliefs, thus denying their physiological and safety needs. Religious figures may abandon worldly goods to fulfill a vow of poverty, thus satisfying the self-actualization need while frustrating the lower-order needs. Artists throughout history have imperiled health and security for the sake of their work. A more common reversal in the hierarchy occurs when people place a greater importance on esteem than on love, believing that the belongingness and love needs can be satisfied only if they first feel self-confident.

Cognitive Needs

Maslow also proposed a second set of innate needs, the **cognitive needs**—to know and to understand, which exist outside the hierarchy we have described. The need to know is stronger than the need to understand. Thus, the need to know must be at least partially satisfied before the need to understand can emerge. Several points of evidence support the existence of cognitive needs (Maslow, 1970b).

_ Laboratory studies show that animals explore and manipulate their environment for no apparent reason other than curiosity, that is, a desire to know and to understand.

_ Historical evidence shows that people often have sought knowledge at the risk of their lives, thus placing the needs to know and to understand above the safety needs.

_ Studies suggest that emotionally healthy adults are attracted to mysterious and unexplained events and are motivated to improve their knowledge about them.

_ Emotionally healthy adults in Maslow's own clinical practice complained of boredom and a lack of zest and excitement in life. He described them as "intelligent people leading stupid lives in stupid jobs" and found that they improved when they took steps to fulfill the needs to know and to understand by becoming involved in more challenging activities. The needs to know and to understand appear in late infancy and early childhood and are expressed by children as a natural curiosity. Because the needs are innate, they do not have to be taught, but the actions of parents and teachers can serve to inhibit a child's spontaneous curiosity. Failure to satisfy the cognitive needs is harmful and hampers the full development and functioning of the personality.

The hierarchy of these two needs overlaps the original five-need hierarchy. Knowing and understanding—essentially, finding meaning in our environment—are basic to interacting with that environment in an emotionally healthy, mature way to satisfy physiological, safety, love, esteem, and self-actualization needs. It is impossible to become self-actualizing if we fail to meet the needs to know and to understand.

The Study of Self-Actualizers

According to Maslow's theory, self-actualizing persons differ from others in terms of their basic motivation. Maslow proposed a distinct type of motivation for selfactualizers called **metamotivation** (sometimes called B-motivation or Being). The prefix *meta-* means after or beyond. Metamotivation, then, indicates that it goes beyond psychology's traditional idea of motivation.

Metamotivation

Metamotivation implies a condition in which motivation as we know it plays no role. Self-actualizing persons are not motivated to strive for a particular goal. Instead, they are said to be developing from within. Maslow described the motivation of people who are not self-actualizers as a condition of D-motivation or Deficiency. D-motivation involves striving for something specific to make up for something that is lacking within us. For example, failure to eat produces a deficiency in the body that we feel as discomfort. This feeling motivates us to take some action to reduce the resulting tension.

Thus, a specific physiological need (hunger) that requires a specific goal object (food) produces a motivation to act to attain something we lack (we search for food). Maslow's writings about the development of B-motivation and D-motivation are incomplete, but apparently D-motivation applies not only to physiological needs, as in the example above, but also to the needs for safety, belongingness and love, and esteem (Maslow, 1971). In contrast, self-actualizing persons are concerned with fulfilling their potential and with knowing and understanding their environment. In their state of metamotivation, they are not seeking to reduce tension, satisfy a deficiency, or

strive for a specific object. Their goal is to enrich their lives by acting to increase tension to experience a variety of stimulating and challenging events. Because their lower-order deficiency needs have been met, self-actualizers function at a level beyond striving for specific goal objects to satisfy a deficit. Thus, they are in a state of “being,”

spontaneously, naturally, and joyfully expressing their full humanity. Having explained that self-actualizers are thus, in a sense, unmotivated, Maslow proposed a list of **metaneeds** toward which self-actualizers evolve (see Table 11.1). Metaneeds are states of being—such as goodness, uniqueness, and perfection—

rather than specific goal objects. Failure to satisfy metaneeds is harmful and produces a kind of **metapathology**, which thwarts the full development of the personality. Metapathology prevents self-actualizers from expressing, using, and fulfilling their potential. They may come to feel helpless and depressed, unable to pinpoint a source for these feelings or identify a goal that might alleviate the distress.

Characteristics of Self-Actualizers

Maslow’s research on emotionally healthy people formed the basis of his personality theory (Maslow, 1970b, 1971). He did not find many examples of self-actualizers; he estimated that they constitute 1 percent or less of the population. However, he concluded that they share certain characteristics (see Table 11.2).

An efficient perception of reality. Self-actualizers perceive their world, including other people, clearly and objectively, unbiased by prejudgments or preconceptions.

An acceptance of themselves, others, and nature. Self-actualizers accept their strengths and weaknesses. They do not try to distort or falsify their self-image and they do not feel guilty about their failings. They also accept the weaknesses of other people and of society in general.

A spontaneity, simplicity, and naturalness. The behavior of self-actualizers is open, direct, and natural. They rarely hide their feelings or emotions or play a role to satisfy society, although they may do so to avoid hurting other people. Self-actualizers are individualistic in their ideas and ideals but not necessarily unconventional in their behavior. They feel secure enough to be themselves without being overly assertive.

Metaneeds	Metapathologies
Truth	Mistrust, cynicism, skepticism
Goodness	Hatred, repulsion, disgust, reliance only upon self and for self
Beauty	Vulgarity, restlessness, loss of taste, bleakness
Unity, wholeness	Disintegration
Dichotomy-transcendence	Black/white thinking, either/or thinking, simplistic view of life
Aliveness, process	Deadness, robotizing, feeling oneself to be totally determined, loss of emotion and zest in life, experiential emptiness
Uniqueness	Loss of feeling of self and individuality, feeling oneself to be interchangeable or anonymous
Perfection	Hopelessness, nothing to work for
Necessity	Chaos, unpredictability
Completion, finality	Incompleteness, hopelessness, cessation of striving and coping
Justice	Anger, cynicism, mistrust, lawlessness, total selfishness
Order	Insecurity, wariness, loss of safety and predictability, necessity for being on guard
Simplicity	Overcomplexity, confusion, bewilderment, loss of orientation
Richness, totality, comprehensiveness	Depression, uneasiness, loss of interest in the world
Effortlessness	Fatigue, strain, clumsiness, awkwardness, stiffness
Playfulness	Grimness, depression, paranoid humorlessness, loss of zest in life, cheerlessness
Self-sufficiency	Responsibility given to others
Meaningfulness	Meaninglessness, despair, senselessness of life

Clear perception of reality
Acceptance of self, others, and nature
Spontaneity, simplicity, and naturalness
Dedication to a cause
Independence and need for privacy
Freshness of appreciation
Peak experiences
Social interest
Deep interpersonal relationships
Tolerance and acceptance of others
Creativeness and originality
Resistance to social pressures

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