PSYCHOL
OF DIFFE
PERSONALITY AND INTELLIGENCE

OGY
RENCE

1884

Francis Galton is the first to investigate **individual differences** scientifically, through large-scale questionnaires.

1905

Alfred Binet and Theodore Simon develop the **first intelligence test**, which becomes known as the Binet-Simon scale.

1937

Gordon Allport publishes his most significant work, *Personality: psychological interpretation*.

1942

Katherine Briggs and Isabel Briggs Myers create the **Briggs Myers Type Indicator**—a widely used psychometric test.

1871

In *The Descent of Man*, **Charles Darwin** argues that variations in intellectual abilities tend to be inherited.

1904

Charles Spearman proposes that intelligent behavior is generated by a single, unitary quality within the brain, which he calls **"the general factor"** or "g."

1921

Floyd and Gordon Allport publish *Personality Traits: their Classification and Measurement*.

1941

Raymond Cattell suggests that intelligence is made up of two factors: **fluid and crystallized intelligence**.

Theoretical psychology has largely been concerned with identifying and examining aspects of the mind and behavior that are common to us all, yet philosophers, and later scientists, have always recognized that there are differences in our psychological make-up that render us individuals. Some of the early philosophers explained differences in personality using the idea of the four humors or temperaments, but it was not until the 20th century that there was any truly scientific study of personality.

Behaviorists, as one would expect, saw personality as a product of conditioning, and psychoanalytical theory described personality as the effect of past experience on the unconscious—but these explanations resulted from research into more general theories rather than a study of personality itself. The first psychologist to systematically approach the subject was Gordon Allport, who felt that existing ideas of personality were inadequate. As one of the pioneers of what is now called "trait theory," he identified a number of different personality traits, which he suggested showed themselves in three different levels in a combination unique to each person. The idea of traits became central to personality psychology and, following Allport's work, it became a major new area of study.

Personality traits

New ways of analyzing traits, such as Raymond Cattell's factor analytical method, which identified 16 personality factors, led to refinement of Allport's theories: reducing the number of traits that combined to form an individual personality. The prominent traits of introversion and extraversion were common to most of these models, and the distinction between them was felt to be a major factor in determining personality. They were incorporated into Hans Eysenck's three-factor model, with its basic traits of extraversion–introversion, neuroticism, and psychoticism.

One assumption that was questioned was whether personality traits would result in consistent behavior. Research conducted by Walter Mischel showed that different situations produced different behavior, and suggested that personality traits should be considered in the context of an individual's perception of and

1947-70s

Hans Eysenck develops an influential **three-factor model** of the theory of personality.

1950

J.P. Guilford suggests that the **Structure of Intellect** (SI) has three dimensions: content, products, and operations.

1954

Corbett H. Thigpen and Hervey M. Cleckley document a case of **multiple personality disorder** in *The Three Faces of Eve*.

1955

David Wechsler develops the **Wechsler Adult Intelligence Scale** (WAIS).

1968

Walter Mischel publishes *Personality and Assessment,* questioning the assumption that behavior is determined by personality traits **regardless of situation or context**.

1973

David Rosenhan questions the validity of psychiatric notions of normal or sane in his **pseudo-patient experiments**.

1986

Nico Frijda publishes *The Emotions*, describing them as changes in an individual that prepare him or her for action.

1990s

Researchers agree on the **"big five" personality traits**—openness, conscientiousness, extraversion, neuroticism, and agreeableness.

reaction to various circumstances. Not only was personality found to be less consistent than had been assumed, but in some cases there was the possibility of an individual having more than one distinct personality. In a case made famous by a book and film, *The Three Faces of Eve*, psychiatrists Corbett H. Thigpen and Hervey M. Cleckley described multiple personality disorder, now called dissociative identity disorder.

The intelligence factor

Another factor that distinguishes us as individuals is intelligence. This had been studied from the earliest days of psychology, but had proved difficult to define or measure. Studies are also frequently controversial; since the time of Darwin and Galton, intelligence was assumed to be an inherited characteristic (and carried with it connotations of racial stereotypes and eugenics) rather than one influenced by environment. The issue of nature versus nurture in determining intelligence became key, with psychologists including Raymond Cattell and Hans Eysenck defending a hereditary viewpoint, and others arguing that not only is intelligence affected by environment, but the way it is tested is culturally biased, giving distorted results.

In the early 20th century, British psychologist Charles Spearman had laid the foundations for a more objective, scientific study of intelligence by using statistical techniques to test and measure intelligence. He identified a single factor, the "g factor," that correlated to all the mental abilities that make up general intelligence. This notion of a single measure of intelligence was challenged by J.P. Guilford, who believed that intelligence consists of a number of different abilities, an idea that led to Raymond Cattell's theory of fluid and crystallized intelligence—two levels of reasoning and critical thinking.

Research into other areas of psychological difference has included emotions and facial expressions, pioneered by Paul Ekman and Nico Frijda, and psychological disorders, but David Rosenhan's experiment showed that it is not easy to distinguish the "normal" from the "abnormal." Individual differences appear to be points on a spectrum, rather than easily labeled divisions—highlighting the complexity and diversity of human psychology. ■

NAME AS MANY USES AS YOU CAN THINK OF FOR A TOOTHPICK

J.P. GUILFORD (1897–1987)

IN CONTEXT

APPROACH
Intelligence psychometrics

BEFORE
19th century Wilhelm Wundt, Gustav Fechner, and Francis Galton claim that individual differences in people's cognitive abilities can be empirically measured.

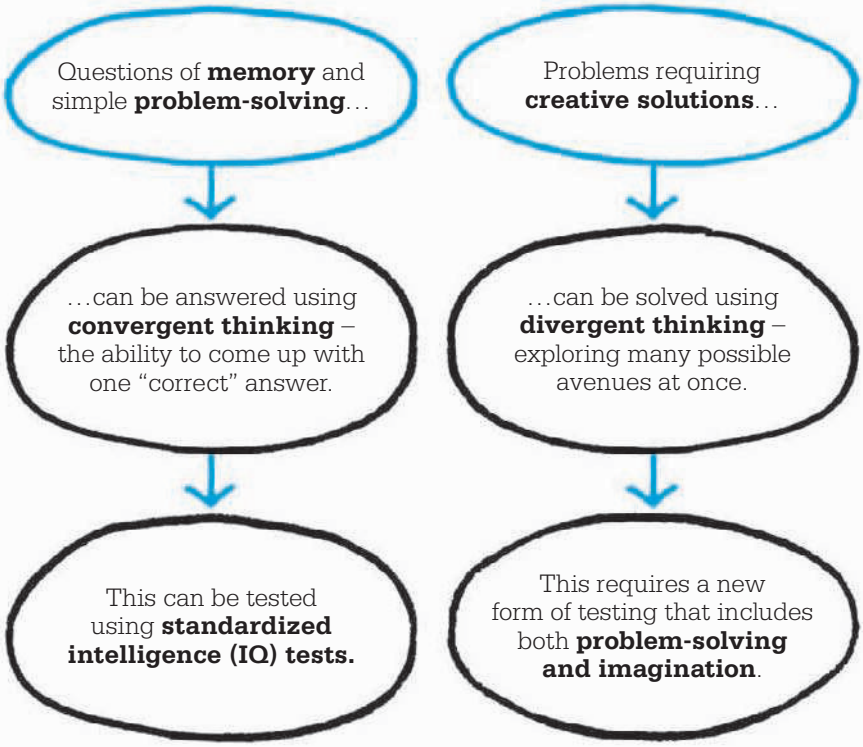
1904 British psychologist Charles Spearman claims intelligence can be summed up in a single number.

1938 British psychologist L.L. Thurstone identifies seven independent factors that make up a person's "primary abilities" or intelligence.

AFTER
1969 Philip E. Vernon estimates that intelligence is 60 percent inborn.

1974 US psychologist Ellis Paul Torrence produces his own tests of creativity, which are most widely used today.

Although intelligence, and what makes up intelligence, had been discussed since the time of ancient Greece, the first systematic method of measuring intelligence was not developed until 1905, when the French psychologist Alfred Binet was asked to identify children who might benefit from educational assistance. Together with researcher Theodore Simon, he created the "Binet–Simon Scale," which used memory, attention, and problem-solving tasks to measure and produce a number, or "quotient," that summarizes intellectual ability.



See also: Alfred Binet 50–53 ▪ Raymond Cattell 314–15 ▪ Hans J. Eysenck 316–21 ▪ William Stern 334 ▪ David Wechsler 336

Creative minds see even toothpicks as potentially having hundreds of uses. Guilford's "Alternative Uses Test" scores people on their ability to think of many original and widely assorted alternatives.

The average intelligence quotient (IQ) was set for convenience at 100, allowing psychologists to categorize people in relation to this score. In practice, around 95 percent of the general population score between 70 and 130, and the top 0.5 percent score over 145, the "genius" level.

Although the scale is still used for most IQ tests today, US psychologist J.P. Guilford believes it has fundamental flaws. Standard intelligence tests, he says, ignore creativity and assume that there is a "general intelligence" that can be represented by an IQ score.

Measuring creativity

By definition, creativity means there is more than one answer to any problem. It requires a different kind of thinking, which Guilford calls "divergent," since it goes in different directions and produces multiple solutions to a problem. In contrast, traditional IQ tests require thinking that ends up with a single answer: "convergent" thinking.

Guilford thought that creativity was measurable—it is indicated by the number of directions in which a person's thoughts travel. He devised a number of tests to quantify divergent thinking, including his 1967 "Alternative Uses Test," which asks participants to write as many uses as they can think of for: (a) a toothpick, (b) a brick, and (c) a paper clip. In his "Consequences Test," subjects were asked to imagine all the things that might possibly happen if all national and local laws were suddenly abolished. Guilford scored the answers on levels of four key components: originality, fluency, flexibility, and elaboration.

Guilford claims that intelligence is not made up of just one "general factor," but of three different groups of activities. "Operations" are the intellectual processes we use; there are six types of these, including memory, cognition, and evaluation. "Content" is the type of information or data involved—there are five of these, including visual and auditory content. "Products" are the results of applying operations to content, such as classes or relations, and there are six of these. The many ways in which we combine and use these different types means there may be anything up to 180 (6 × 5 × 6) types of intelligence—more than 100 of these have already been verified.

The complexity of Guilford's theory and problems with testing mean that his tests are used less frequently than standard IQ tests, but his work has influenced research into intelligence and creativity. ■

J.P. Guilford

Joy Paul Guilford was born on a farm in Nebraska. Always markedly intelligent, he was the valedictorian of his high school class. His bachelor's degree in psychology was interrupted by a spell in the army as a private, but he went on to earn a PhD from Cornell University. In 1928, he returned to Nebraska as an associate professor, then took a position at the University of Southern California (USC) in 1940, remaining there—apart from a short secondment during World War II—until his retirement in 1967. Described as a devoted family man of enormous integrity and generosity, his shyness earned him the nickname "gray ghost" during his time in the army. An influential and prolific researcher, Guilford produced more than 25 books, 30 tests, and 300 articles.

Key works

1936 *Psychometric Methods*
1967 *The Nature of Human Intelligence*

> The person who is capable of producing a large number of ideas per unit of time… has a greater chance of having significant ideas.
> **J.P. Guilford**

DID ROBINSON CRUSOE LACK PERSONALITY TRAITS BEFORE THE ADVENT OF FRIDAY?

GORDON ALLPORT (1897–1967)

IN CONTEXT

APPROACH
Trait theory

BEFORE
2nd century BCE Galen classifies human temperament according to the four humors.

1890 In *Principles of Psychology*, William James makes an early attempt to define the self as having both an "I" (the knowing self) and a "me" (the experiencing self).

AFTER
1946 Raymond Cattell develops his 16PF (Personality Factors) questionnaire, based on Allport and Odbert's lexical hypothesis.

1970s Hans J. Eysenck creates the PEN (Psychoticism, Extraversion, Neurotisicm) personality questionnaire.

1993 American psychologist Dan P. McAdam demonstrates the idiographic method in his book *The Stories We Live By*.

Gordon Allport is sometimes referred to as one of the founding fathers of personality psychology, as he was the first psychologist of modern times to embark on a dedicated study of personality. Since the early work on the four temperaments by Hippocrates (c.400 BCE) and Galen (c.150 CE), there seems to have been no attempt to classify personality in any detail. In the 19th century, personality was barely mentioned in psychology, though there was much discussion of the self, or "ego."

In the early 20th century, the two predominant schools of psychology—psychoanalysis and behaviorism—were polar opposites in approach. Both were highly developed and influential schools that remain powerful (as well as enduringly controversial) to this day. Behaviorism, being interested only in how we acquire (or learn) our behavior, had nothing to say about personality; while psychoanalysis offered an in-depth approach, arguing for the existence of an unknowable unconscious that controls personality but reveals itself only fractionally and accidentally by slips of the tongue and in dream symbols.

> People… are busy leading their lives into the future, whereas psychology, for the most part, is busy tracing them into the past.
> **Gordon Allport**

The American psychologist Gordon Allport had fundamental problems with both of these approaches. He thought that behaviorism was wrong to discount the "person" doing the learning, because each person is unique and their perception is part of the process. He also considered psychoanalysis to be inadequate for explaining personality and behavior because it placed too much importance on a person's past, ignoring their current context and motivations. His view was

Personality is formed from…

…**cardinal traits** or "ruling passions", such as altruism. Not everyone has a cardinal trait, and those that do are often famous for it.

…**common traits**, such as honesty or aggression. In the absence of cardinal traits, personality is shaped by these traits.

…**secondary traits**, such as being nervous when meeting strangers or laughing at inappropriate moments. These traits are evoked by specific situations.

See also: Galen 18–19 ▪ William James 38–45 ▪ Sigmund Freud 92–99 ▪ Carl Rogers 130–37 ▪ Abraham Maslow 138–39 ▪ Martin Seligman 200–01 ▪ Paul Salkovskis 212–13 ▪ Raymond Cattell 314–15 ▪ Hans J. Eysenck 316–21 ▪ William Stern 334

affirmed when, as a young college graduate, he paid a visit to Sigmund Freud in Vienna. On first meeting, to make small talk, Allport told Freud of a small boy he had met on the train on the way, who was afraid of getting dirty and refused to sit near anyone dirty, despite his mother's encouragement. Perhaps, Allport suggested, the child had learned this dirt phobia from his mother, a neat and rather domineering woman. Freud then asked, "And was that little boy you?" Freud's reduction of this small observation of Allport's to some unconscious episode from his own childhood seemed, to Allport, dismissive of all his current motivations and intentions. Throughout his work, Allport emphasizes the present over the past, though later in his life he paid more attention to psychoanalysis as a supplement to other methods.

Allport argued for an approach to the study of human learning and personality that was reasoned, eclectic, and conceptually open-minded. He took some of what he believed from prevailing approaches, but his central belief is that the uniqueness of each individual and his or her personality is largely—but not exclusively—forged in human relationships.

Theory of personality

Allport's idea of personality is a complex amalgam of traits, human relationships, current context, and motivation. He identified two distinctly different approaches to the study of personality—the nomothetic and idiographic methods—both of which had been devised by the German philosophers Wilhelm Windelband and Wilhelm Dilthey, but had first been put into practice by Allport's university tutor, William Stern. The first method, the nomothetic, aims to be as objective and scientific as possible, and it is exemplified in the study of human intelligence. This involves obtaining test results from large populations of people, on personality traits such as extraversion and introversion. Results can be submitted to a sophisticated analysis, resulting in a number of general conclusions, such as the percentages of people who are extravert or introvert, or variations linked to age, gender, or geography. However, this method does not aim to comment in any way on traits at the individual level; it focuses on comparative comments and conclusions about a certain trait, rather than any particular person. This was the method that the behaviorist B.F. Skinner used for his observations of rat behavior.

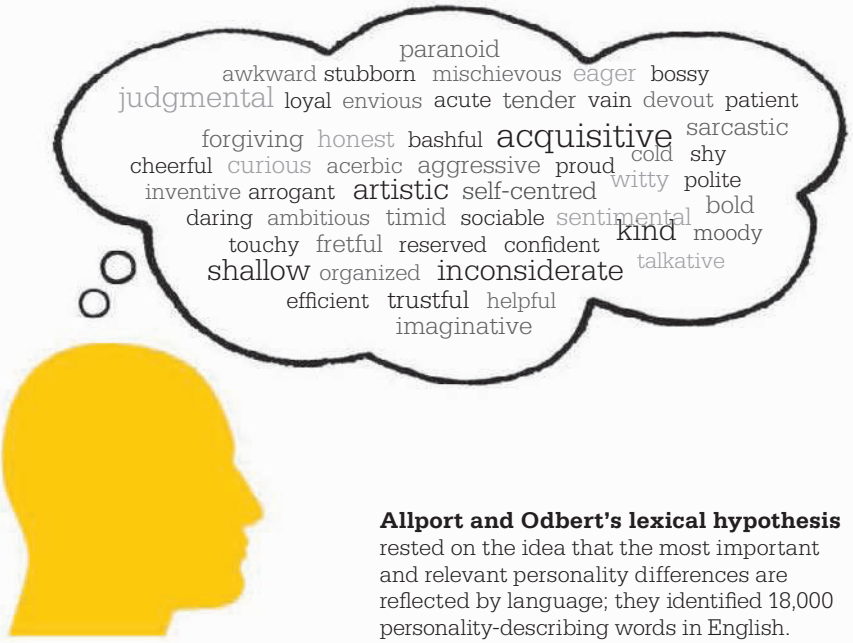
The second method, the idiographic, stands in direct opposition to the nomothetic method; it studies one individual in breadth and depth, taking into account their biography, their personality traits, and their relationships, as well as how they are seen and experienced by others. This method is much closer to the psychoanalytic method with its focus on one person, one life.

Allport said that while the nomothetic method was a way of describing traits, it had little explanatory power; whereas the idiographic method, though unable to draw any general conclusions, could explain one person in illuminating detail. He was to use both methods, though his work in general is not known for its focus on empirical research; he was more of a theorist, almost a philosopher. Yet his very first paper, *Personality Traits: Their Classification and Measurement*, cowritten with his brother Floyd, was an excellent example of the nomothetic method. One of his last major pieces of work, the analysis of Jenny Masterson, was an extraordinarily detailed example of the idiographic method.

The lexical hypothesis

In his first study, Allport and his brother reported their research on personality traits. They asked the participants to complete a personality questionnaire, and to ask three people who knew them well to complete it too; this reflected the Allport brothers' view that personality is forged in relationship to others. They concluded from their results that there is a case for identifying traits, and for attempting to measure them. They also believed they had proven the possibility of developing a complete and sensitive instrument for the measurement of personality. »

> Types exist not in people or in nature, but rather in the eye of the observer.
> **Gordon Allport**



Allport and Odbert's lexical hypothesis rested on the idea that the most important and relevant personality differences are reflected by language; they identified 18,000 personality-describing words in English.

In 1936, Allport and his colleague H.S. Odbert proposed that individual differences that are most salient and socially relevant in people's lives eventually become expressed through language; and the more important the difference, the more likely it is to be expressed as a single word. This idea is known as the lexical hypothesis. The two researchers went on to study the most comprehensive dictionaries of the English language available at the time, to find 18,000 words that described personality. They narrowed this down to 4,500 adjectives that they considered to be observable and stable personality traits.

> A man can be said to have a trait; but he cannot be said to have a type.
> **Gordon Allport**

Cardinal traits

Based on a further analysis of his lexical study, Allport defined three distinct categories of traits: cardinal, common, and secondary. Cardinal traits are those that are fundamental to a person, governing their entire approach to life. Not everyone has a cardinal trait, according to Allport, but when they do, they may even be famous for them; in fact some people are so famous for them that their name becomes a byword for that trait, giving us terms such as Byronic, Calvinistic, and Machiavellian. On a less iconic scale, a person's cardinal trait might be something like "a fear of communism," where this is so central and important to someone that it guides and unifies their life in both conscious and unconscious ways; virtually every act is traceable to its influence.

In his later years, Allport considered a person's cardinal traits as contributing to the *proprium*: the essential drives, core needs, and desires of a person. This concept goes beyond the idea of temperament, and is more akin to a guiding purpose that will always press for expression. As an example of the *proprium*, Allport gave the Norwegian polar explorer Roald Amundsen, who had one dominant passion from the age of 15: he wanted to be a polar explorer. The obstacles to his ambition seemed insurmountable, and the temptation to relinquish his dreams was great, but the "propriate" striving persisted, and though he welcomed each success, it simply raised his level of aspiration. Having sailed the Northwest Passage, Amundsen embarked upon the project that led to his success in reaching the South Pole. Then, after years of planning and discouragement, he flew over the North Pole. His commitment never wavered, and he eventually died attempting to save the life of a less experienced explorer.

Less fundamental traits

In contrast to cardinal traits, common traits are general characteristics, such as honesty, that are found in most people. These are the building blocks that shape our behavior, but they are less fundamental than cardinal traits. Common traits, Allport said, develop largely in response to parental influences, and are a result of nurture. They are shared among many people within a culture but in varying degrees; aggressiveness, for instance, is a common trait that varies by degrees. According

> Any theory that regards personality as stable, fixed, or invariable is wrong.
> **Gordon Allport**

to Allport, most of us have personalities made up of five to ten of these traits at a level whereby they have become our "outstanding characteristics."

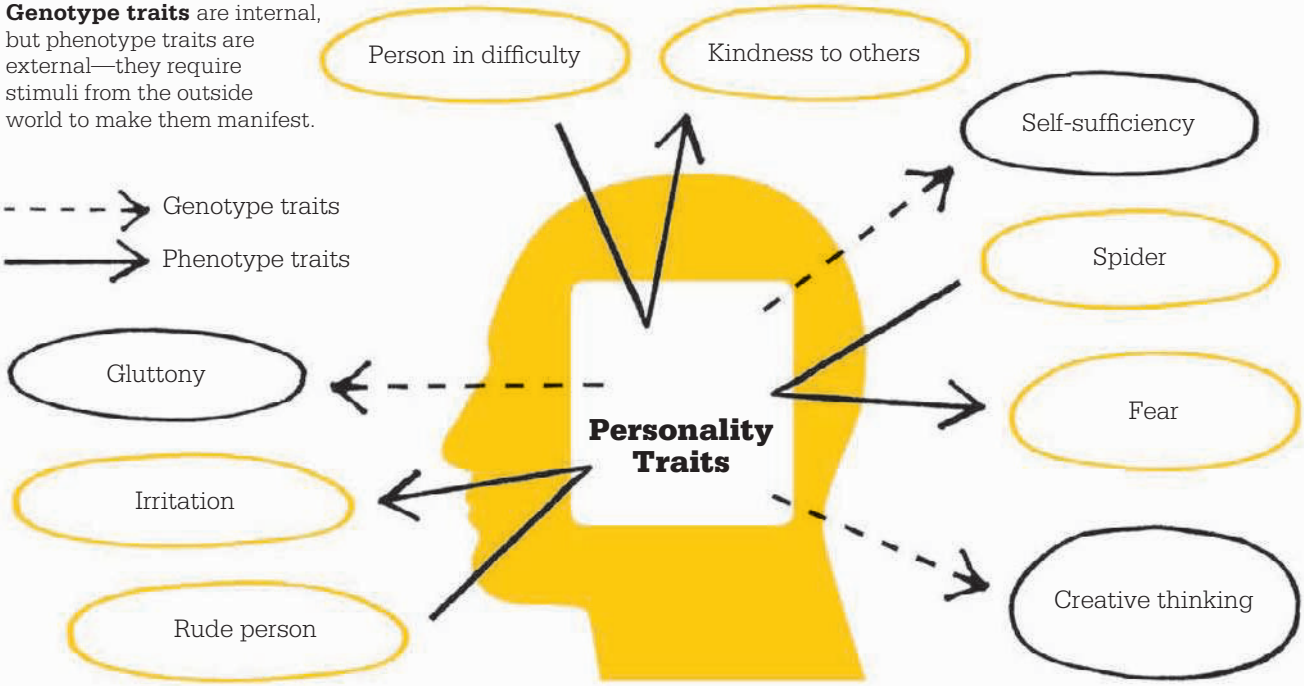
Over time, common traits may achieve "functional autonomy," by which Allport means that although we start doing something for one reason, we may carry on doing it for quite another. This is because our motives today are not continuously dependent on the past. We may start learning to draw, for instance, to compete in popularity with another child in class, but ultimately become more interested in perfecting the craft for its own sake. This means that how we think and act today is only indirectly affected by our past. Functional autonomy is also thought to explain obsessive and compulsive acts and thoughts: they may be manifestations of functionally autonomous traits, where someone has no idea why he is doing something, but can't stop himself from doing it.

Allport's third category of traits, known as secondary traits, exert much less influence on us than cardinal or common traits. They are only seen in certain circumstances, because they are determined by context or situation. For instance, we might say of someone "he gets very angry when tickled" or "she gets nervous on flights." These traits express preferences or attitudes that are open to change. In the absence of another person, secondary traits might be present but quite invisible. Added to the common and cardinal traits, they provide a complete picture of human complexity.

Traits and behavior

Allport was interested in how traits are forged in a person, and their connection with behavior. He suggested that a combination of internal and external forces influence how we behave. Certain internal forces, which he called "genotypes," govern how we retain information and use it to interact with the external world. At the same time, external forces, which he named "phenotypes," determine the way individuals accept their surroundings and how they allow others to influence their behavior. »

Genotype traits are internal, but phenotype traits are external—they require stimuli from the outside world to make them manifest.



Robinson Crusoe, Allport concluded, must always have had many distinctive personality traits, but some were only uncovered by new circumstances after he was shipwrecked and met Friday.

These two forces, he said, provide the groundwork for the creation of individual traits.

Applying these ideas to the story of Robinson Crusoe, Allport saw that, prior to his meeting with Friday, Crusoe's genotypes, or inner resources, along with some phenotype aspects, helped him to survive alone on a desert island. He had the resilience to overcome his initial despair, and fetched arms, tools, and other supplies from the ship before it sank. He built a fenced-in compound around a cave, and kept a calendar. He hunted, grew corn and rice, and learned to make pottery and raise goats, and he also adopted a parrot. He read the Bible and became religious. These activities demonstrated the expression of Crusoe's genotypical traits and resulting behaviors.

However, it was only with the arrival of Friday that other aspects of his phenotypic behaviors could find expression: he helped Friday to escape from his captors; he named him; he had the patience and persistence to teach him to speak English, and the capability to convert him to Christianity. While Crusoe always had these personality traits, they remained unexpressed on the island until he formed a relationship with Friday. The idea is similar to a well-known philosophical puzzle: if a tree falls down in a forest, and there is nobody there, does it make a noise? For Allport, traits make behavior consistent; they are always there, even if no one is around to evoke them or witness them in action.

An idiographic study

After the publication of *Personality: A Psychological Interpretation* in 1937, Allport turned his attention to the topics of religion, prejudice, and ethics. But in 1965 he returned to the subject of personality by undertaking an idiographic study of the personality traits of Jenny Masterson, who lived from 1868 to 1937. During the last 11 years of her life, Jenny wrote 300 personal letters to a married couple with whom she was friendly. Allport used these letters for his analysis, asking 36 people to characterize Jenny's personality traits from her letters. Eight trait "clusters" encompassing 198 individual traits were relatively easy to identify, with broad agreement from all the people rating the documents. These traits were: quarrelsome–suspicious; self-centered; independent–autonomous; dramatic–intense; aesthetic–artistic; aggressive; cynical–morbid; and sentimental.

However, Allport concluded that this trait analysis of Jenny was somewhat inconclusive, and so he went on to use a number of other frameworks, including Freudian and Adlerian analysis. Assisted by his students Jeffrey Paige and Alfred Baldwin, he also applied "content analysis" to the material. This was a new form of computerized analysis, where the computer was programmed to count the number of times words or phrases occur that are related to a given topic or emotion. Allport was particularly impressed by this new method

> Personality is far too complex a thing to be trussed up in a conceptual straight jacket.
> **Gordon Allport**

because of its potential to analyze idiographic data, confirming his belief that the idiographic approach can identify subtleties of an individual character that trait questionnaires alone cannot reveal.

In 1966, Allport published a paper entitled *Traits Revisited* suggesting that the aim of personality study should not be the microanalysis of individual traits, but the study of the psychic organization of the whole person. He stated that his early writings about traits were written in an age of psychological innocence, although he maintained his belief that traits are a reasonable starting point for the description of personality.

Allport's influence

Allport's work forms the basis of many contemporary schools of thought, though he is rarely credited directly. Much of modern personality testing derives from the work of Raymond Cattell and Hans Eysenck, and both of these psychologists drew upon Allport's lexical study. Cattell's "16 Personality Factor Questionnaire," which is still used by psychologists today, uses 16 traits identified by Cattell through computer analysis of Allport and Odbert's original 4,500 adjectives.

Humanistic psychology, which forms the basis of most counseling and therapeutic practices, also relies heavily upon Allport's ideas, particularly his idiographic method and insistence upon the uniqueness of each and every person. Increased focus on the practitioner–client relationship as a vehicle for the expression and development of personality has its roots in Allport's assertion that personality is largely a function of relationships.

Allport was also one of the first to point out that even those psychological theories that attempt to explore positive human experience are based "largely upon the behavior of sick and anxious people or upon the antics of captive and desperate rats." He wondered why there were no theories based on the study of healthy human beings, and those who strive to make life worth living. He pointed out that most studies are of criminals, not of law abiders; of fear, not courage; and focus on the blindness of humans, rather than their vision. The burgeoning school of positive psychology, led by Martin Seligman, has taken up this idea and aims to develop a scientific psychology of positive experience.

By 1955, when Allport wrote *Becoming*, his thinking had developed further; he now saw human striving toward a higher level of consciousness and realization as the true motive of personality. The idea that "becoming" is the ultimate goal of human beings was also developed by the psychologists Carl Rogers and then Abraham Maslow, who renamed it "self-actualization." Although Allport's work is cited less often than other well-known figures, he had a profound and lasting influence on the field of psychology. ■

> Allport urged psychologists to study personality traits and leave character to the province of philosophy.
> **Martin Seligman**

Gordon Allport

Gordon Willard Allport was born in Montezuma, Indiana in 1897. The youngest of four sons, Allport was shy and studious as a child, but as a teenager he became editor of his school newspaper and ran his own printing business.

During World War I, Allport performed military duties, before winning a scholarship to Harvard University to study philosophy and economics. After graduating in 1919, he taught for a year in Turkey, then went back to Harvard, where he gained his doctorate in psychology in 1922. He also studied with the Gestalt School in Germany, and at Cambridge University in England.

In 1924, Allport again returned to Harvard to teach the first course in personality studies in the US. Apart from four years at Darmouth College, he remained at Harvard until his death from lung cancer, aged 70, in 1967.

Key works

1937 *Personality: A Psychological Interpretation*
1954 *The Nature of Prejudice*
1955 *Becoming*
1961 *Pattern and Growth in Personality*

GENERAL INTELLIGENCE CONSISTS OF BOTH FLUID AND CRYSTALLIZED INTELLIGENCE

RAYMOND CATTELL (1905–1998)

IN CONTEXT

APPROACH
Intelligence theory

BEFORE
1900s Alfred Binet claims intelligence can be measured, and introduces the term "intelligence quotient" (IQ).

1904 Charles Spearman identifies "g" as an underlying property of intelligence.

1931 In *The Measurement of Intelligence,* Edward Thorndike says that there are three or four main types of intelligence.

AFTER
1950 J.P. Guilford claims that there are around 150 different types of intellectual ability.

1989 US psychologist John B. Carroll proposes a three-stratum psychometric model of intelligence, consisting of narrow abilities, broad abilities, and Charles Spearman's "g" factor.

Raymond Cattell, considered to be one of the dozen most eminent psychologists of the 20th century, contributed hugely to the study of human intelligence, motivation, and personality. His interest in intelligence was sparked early in his career when he was a student of Charles Spearman, the British psychologist who defined "g"—a single-factor, general intelligence that serves as the foundation for all learning.

In 1941, Cattell developed this concept further, defining two different types of intelligence that made up "g": fluid and crystallized intelligence. Fluid intelligence is a series of thinking or reasoning abilities that can be applied to any issue or "content." Sometimes described as the intelligence we use when we don't already know how to do something, it comes into play automatically in processes such as problem-solving and pattern recognition, and it is thought to be closely related to working memory capacity.

Cattell suggests fluid intelligence is genetically inherited, which may account for individual differences.

General underlying intelligence (g)
is made up of two parts.

Fluid intelligence, which is the ability to think and reason abstractly, and to perceive relationships between things without prior practice or instruction.

Crystallized intelligence, which builds from past experiences and learnt facts, and amounts to judgement skills that accumulate as we age.

See also: Alfred Binet 50–53 ▪ J.P. Guilford 304–05 ▪ Hans Eysenck 316–21 ▪ William Stern 334 ▪ David Wechsler 336

It builds to a peak in young adulthood, then steadily declines, perhaps because of age-related changes in the brain. Brain injury can affect fluid intelligence, which suggests it is largely physiological.

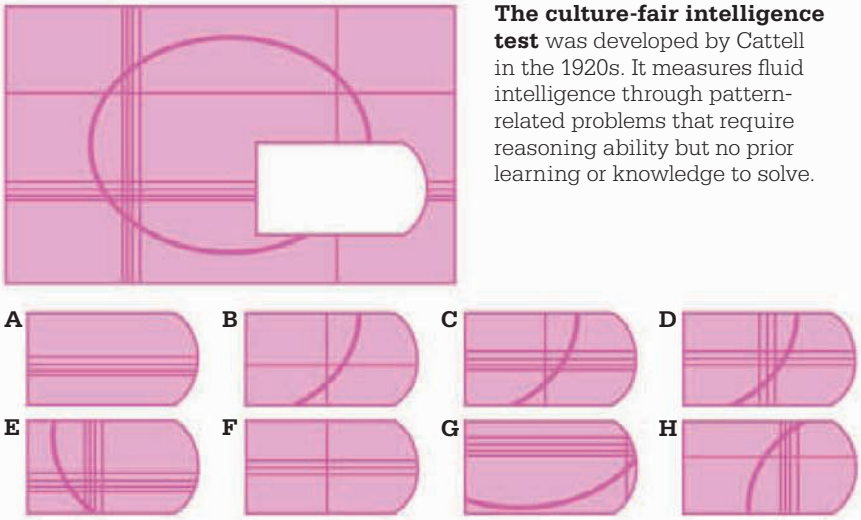
Crystallized intelligence

As we use fluid intelligence for solving problems, we begin to develop stores of knowledge and working hypotheses about the world around us. This store of knowledge is our crystallized intelligence, described by Cattell as "the set of judgmental skills" gained from investing fluid intelligence in cultural activities. Vast differences in learning experiences occur because of factors such as social class, age, nationality, and historical era.

Crystallized intelligence includes skills such as verbal comprehension and numerical facility, because these abilities rely on knowledge already gained—such as the rules of grammar or addition, subtraction, and other mathematical concepts. This form of intelligence increases gradually over a lifetime and stays relatively stable until we are around 65 years old, when it begins to decline.

Cattell sees fluid and crystallized intelligence as fairly independent of each other, but reasons that having a higher fluid intelligence might lead to the broader and faster development of crystallized intelligence, depending on factors relating to personality and interests.

Noting that standard IQ tests tend to assess a combination of fluid and crystallized intelligence, Cattell developed tests to assess fluid intelligence in isolation. His culture-fair intelligence test, which uses nonverbal, multiple-choice questions based on shapes and patterns, requires no prior learning from the participants and can be used to test children and adults from any culture. ■



The culture-fair intelligence test was developed by Cattell in the 1920s. It measures fluid intelligence through pattern-related problems that require reasoning ability but no prior learning or knowledge to solve.

Raymond Cattell

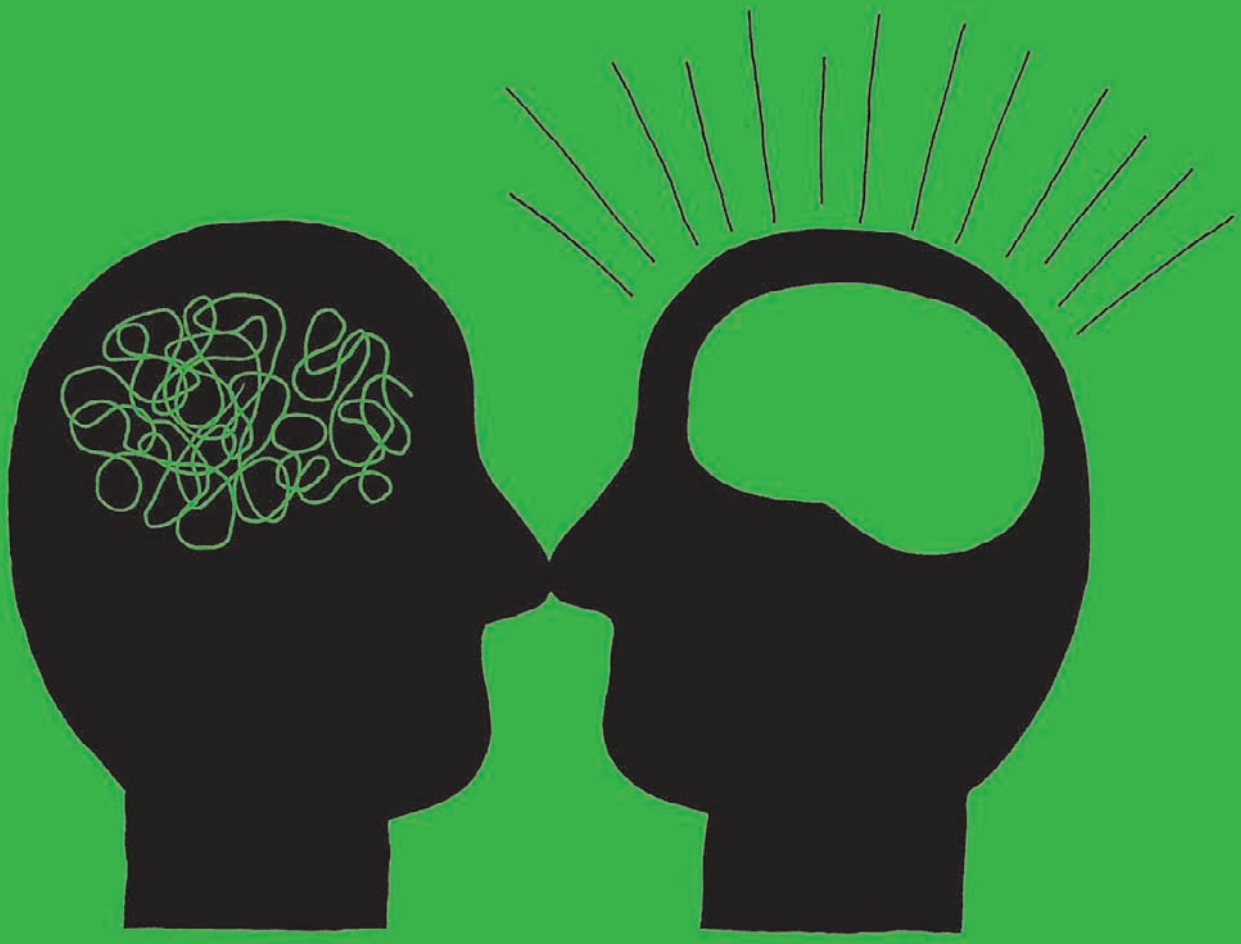
Born in Staffordshire, England, Raymond Bernard Cattell achieved a first-class degree in chemistry in 1924 before turning to psychology and receiving his doctorate in 1929. After teaching in London and Exeter universities, he ran the Leicester Child Guidance Clinic for five years before moving to the US in 1937. He lived and taught there until 1973, holding posts at Clark and Harvard universities, and the University of Illinois. Cattell married three times and moved to Honolulu as a professor at the University of Hawaii, spending the rest of his life there. In 1997, the American Psychological Association honored him with a Lifetime Achievement Award. However, his idea that nations should safeguard high, inherited intelligence through eugenics made this a controversial award, and led to critical attacks. Cattell defended himself and refused the award, but died of heart failure the following year.

Key works

1971 *Abilities*
1987 *Intelligence*

THERE IS AN ASSOCIATION BETWEEN INSANITY AND GENIUS

HANS J. EYSENCK (1916–1997)



IN CONTEXT

APPROACH
Personality

BEFORE
1926 American psychologist Catharine Cox tests the intelligence and personalities of 300 geniuses and finds the average IQ to be 165+; key characteristics are tremendous persistence and motivation.

1956 J.P. Guilford develops the concept of divergent thinking to discuss creativity.

AFTER
2009 In *Genius 101: Creators, Leaders, and Prodigies*, American psychologist Dean Keith Simonton argues that geniuses are the result of good genes and good surroundings.

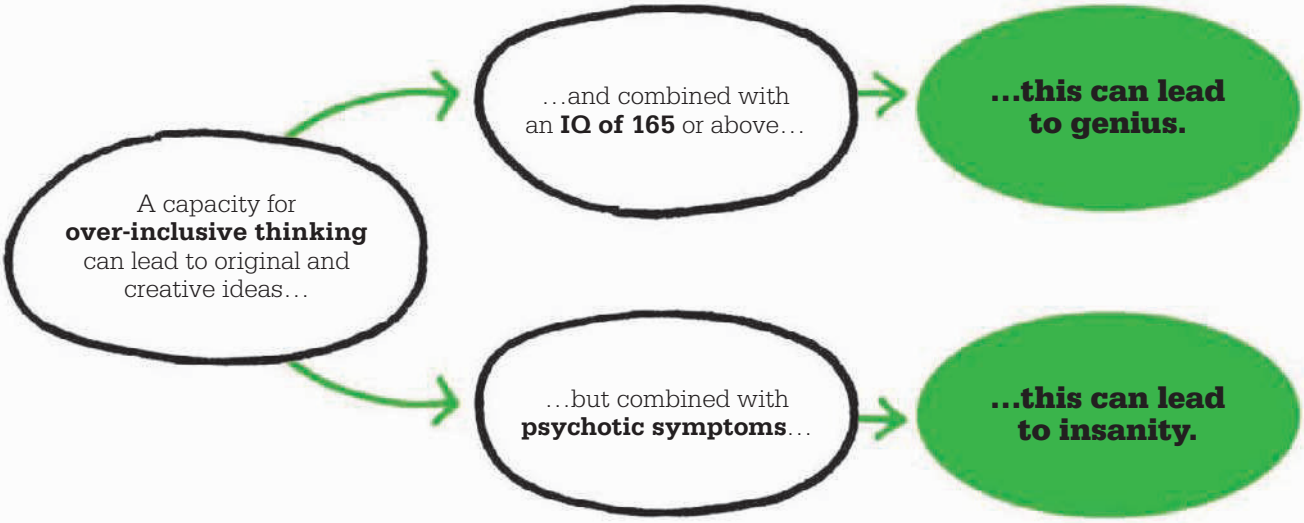
2009 Swedish psychologist Anders Ericsson attributes expert performance to 10,000 hours of practice.

Discussion about genius has been dominated for most of its history by the nature-versus-nurture debate: is a genius born or made? Prior to the early 1900s, ideas about genius were based largely on stories of people who were perceived as geniuses, such as Leonardo da Vinci and Beethoven. As early as Aristotle, creative genius and madness were seen as linked, and both assumed to be largely genetic in nature. In 1904, British psychologist Havelock Ellis's *A Study of British Genius,* reported controlled studies of both psychotic patients and creative people to establish a link between the two. Seventy years later the German psychologist Hans Eysenck reviewed the early evidence and concluded that it is not psychosis (full blown insanity) that is related to genius, but psychoticism, which he defined as an underlying disposition to develop psychotic symptoms.

Temperament and biology

Many psychologists have defined and measured personality traits, but Eysenck's interests focused on human temperament rather than the detailed characteristics that make up a whole person. He was a biologist, and like others before him, notably the ancient Greek physicians Hippocrates and Galen, he believed that physiological factors account for temperament. Hippocrates had suggested that personality type arises from an excess or deficit of a particular type of bodily fluids, known as humors. Galen expanded upon this idea to suggest there are four types of temperament: sanguine, choleric, phlegmatic, and melancholic.

> There is a common genetic basis for great potential in creativity and for psychological deviation.
> **Hans J. Eysenck**

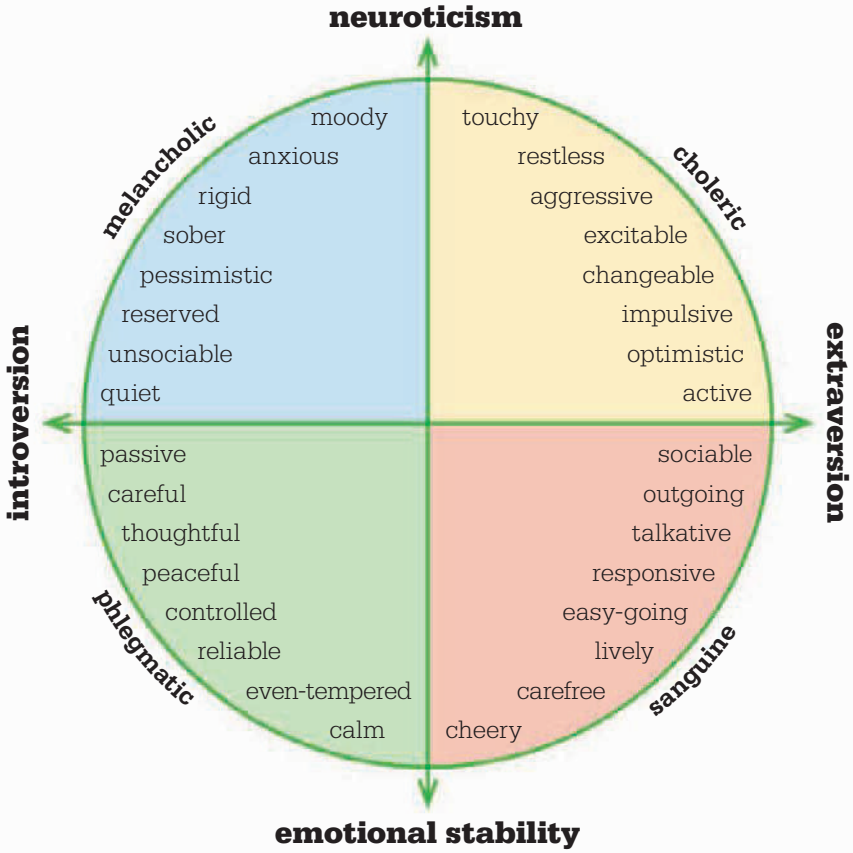


See also: Galen 18–19 ▪ Francis Galton 28–29 ▪ J.P. Guilford 304–05 ▪ Gordon Allport 306–13 ▪ Raymond Cattell 314–15 ▪ Walter Mischel 326–27 ▪ David Rosenhan 328–29

He claimed that sanguine people have an excess of blood, and are cheerful and optimistic. Those with a choleric temperament, stemming from an abundance of bile, are quick and hot-tempered. Phlegmatic individuals, with too much phlegm, are slow, lazy, and dull. Melancholics, who suffer from black bile, are sad, pessimistic, and depressed.

Galen's biological approach appealed to Eysenck, who considered temperament to be physiological and genetically determined. He proposed a measure of two dimensions, or overarching "superfactors" of personality, that encompass all the detailed traits: Neuroticism and Extraversion–Introversion, which he then mapped against Galen's four temperaments.

Eysenck's model of personality provides an overarching paradigm for defining temperament. Each of the superfactors (Extraversion and Neuroticism) is made up of lower-order habits, such as "lively." The two superfactors divide habits into four types that reflect Galen's four temperaments.



Eysenck's scales

"Neuroticism" was Eysenck's name for a personality dimension that ranges from emotionally calm and stable at one extreme, to nervous and easily upset at the other. He claimed that neurotics (at the less stable end of the spectrum) have a low activation threshold in terms of triggering the sympathetic nervous system, which is the part of the brain that activates the "fight or flight" response. People with this more responsive system are hyperactive in this regard, so they respond to even minor threats as though they are seriously dangerous, experiencing an increase in blood pressure and heart rate, sweating, and so on. They are also more likely to suffer from the various neurotic disorders. However, Eysenck was not suggesting that people who scored at the nervous end of this dimension are necessarily neurotic in practice, merely that they would be more likely to develop a variety of nervous disorders. Eysenck's second dimension of temperament was "Extraversion–Introversion." He used these terms very much as we use them to describe people around us: extraverts are outgoing and talkative, while introverts are shy and quiet. Eysenck claimed that variations in brain activity explain the difference: introverts are chronically over-aroused and jittery, while extraverts are chronically under-aroused and bored; so the brain must either wake itself up through seeking further excitement with other people (extraverts) or calm itself down through seeking peace and solitude (introverts).

Psychoticism

Eysenck tested his ideas on large groups of people, but realized there were some sections of society that he was missing; so he took his studies into mental institutions. »

> Introverts are characterized by higher levels of activity than extraverts and so are chronically more cortically aroused than extraverts.
> **Hans J. Eysenck**

Through this work, he identified a third dimension of temperament, which he labelled "psychoticism," a term that has largely replaced the word "insanity" in general use. In personality theory, this was quite a departure: most personality theorists were attempting to define and measure the normal (sane) personality. However, Eysenck said that, as with the neuroticism dimension, psychoticism ranges along a scale; his tests looked for the occurrence of personality traits commonly found among psychotics.

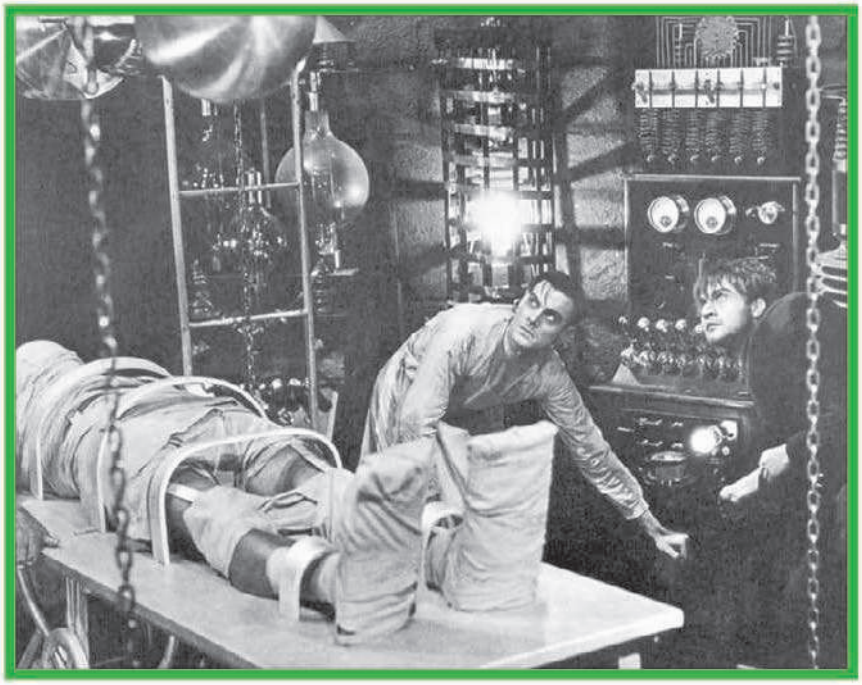
Eysenck found that a number of personality traits relate to each other to produce psychoticism; those who score highly on this scale are usually aggressive, egocentric, impersonal, impulsive, antisocial, unempathic, creative, and tough-minded. A high score on the scale does not mean a person is psychotic, and it is not inevitable that they will become so; they simply share characteristics with psychotic patients. In controlled studies, such as those by Norwegian psychologist Dan Olweus and his colleagues in 1980, the aggressive element of psychoticism has been related biologically to increased testosterone levels.

Studying genius

A clear psychological definition of creativity has proved slippery, but there is broad agreement that it involves originality and novelty, and is based on aspects of both intellectual ability and personality. In his paper, *Creativity and Personality: Suggestions for a Theory*, Eysenck aimed to throw some light on the nature of creativity and its relationship to intelligence, personality, and genius.

Genius is held to be the highest form of creativity, and it rests upon very high intelligence: an IQ score of at least 165 is considered to be a prerequisite. However, a high IQ is not enough on its own. Another relevant component of intelligence is the mental search process which we use to find solutions, by bringing together different ideas from memory to form new answers to problems. This mental scanning is guided by ideas of relevance: what past ideas and experiences do I have that are relevant to this problem? Each of us performs this differently, and it is an ability that is independent of our IQ. The ability runs along a scale, ranging from an expansive, over-inclusive idea of what is relevant (seeing too many things as potential possibilities), to an overly narrow one (seeing few possibilities); at the center sits a more conventional sense of what might apply to any problem at hand.

Over-inclusive thinking can be measured by word-association tests, which analyze two features: the number of responses to any given word, and the originality of responses. For example, when presented with the word "foot," those with a narrow range of responses are most likely to



Professor Frankenstein creates a monster in Mary Shelley's novel, and exhibits classic psychotic symptoms: recklessness, disregard for conventions, and tough-mindedness.

Creative geniuses, such as the artist Vincent van Gogh, exhibit traits from Eysenck's psychoticism dimension, particularly over-inclusive thinking, independence, and nonconformity.

respond with the word "shoe;" a slightly wider range of inclusive thinking might contain the words "hand" or "toe," while an over-inclusive person might generate words such as "soldier" or "sore." This kind of test makes it possible to measure people's creativity.

It is the element of over-inclusive thinking that Eysenck demonstrated to be a common feature of both psychoticism and creativity. When over-inclusive thinking and high IQ are present together, creative genius will result, because the combination generates creative and original ideas. This is the cognitive characteristic that lies at the base of creativity. When over-inclusive thinking and psychotic symptoms are present together, psychosis, in varying degrees, may result.

Creativity and personality

Eysenck believed that creativity is a personality trait that provides the potential for creative achievement, but the realization of that potential lies in the character trait of psychoticism (in the absence of psychosis). The drive to translate the trait of creativity into achievement, for example by creating works of art, comes from aspects of the psychotic temperament, in particular the over-inclusive thinking style. Eysenck was not suggesting a causal link between genius and insanity; while the two things have something in common—over-inclusive thinking—this combines with other features of genius or insanity to lead to very different results.

Research into creativity faces a number of difficult challenges: with some researchers claiming that creativity can only be judged on what it produces. Eysenck felt unable to propose a fully developed theory of creativity, only a suggestion for one. As he said, "I am linking several fuzzy theories." His work ranged over many areas, though he is best known for his exploration into personality and intelligence. His PEN (Psychoticism, Extraversion, Neuroticism) model was hugely influential, and acted as the basis for much of the later research into personality traits. ■

> "Psychoticism in the absence of psychosis… is the vital element in translating the trait of creativity (originality) from potential to actual achievement."
> **Hans J. Eysenck**

Hans J. Eysenck

Hans Jurgen Eysenck was born in Berlin, Germany, to artistic parents; his mother was a well-known film actress, and his Catholic father, Eduard, was a stage performer. His parents separated soon after his birth, and he was raised by his maternal grandmother. In 1934 he discovered that he could only study at Berlin University if he joined the Nazi party, so he traveled to England to study psychology at University College London.

He married in 1938 and after narrowly escaping internment as a German citizen during World War II, he completed a PhD, and took up work as a psychologist at an emergency hospital. He later founded and then headed the Institute of Psychiatry at the University of London. Eysenck married again in 1950, and became a British citizen in 1955. He was diagnosed with a brain tumor in 1996 and died in a London hospice in 1997.

Key works

1967 *The Biological Basis of Personality*
1976 *Psychoticism as a Dimension of Personality*
1983 *The Roots of Creativity*

THREE KEY MOTIVATIONS DRIVE PERFORMANCE

DAVID C. McCLELLAND (1917–1998)

IN CONTEXT

APPROACH
Need theory

BEFORE
1938 American psychologist Henry Murray develops his theory of how personality is shaped by psychogenic needs.

1943 Abraham Maslow's *A Theory of Human Motivation* presents his hierarchy of needs.

1959 In *Motivation to Work*, US psychologist Frederick Herzberg states that achievement, rather than money, motives people.

AFTER
1990 In *Flow: The Psychology of Optimal Experience*, Mihály Csíkszentmihályi discusses motivation for achievement.

2002 Martin Seligman explores motivation as the expression of character strengths.

2004 In *Leadership That Gets Results*, US psychologist Daniel Goleman applies McClelland's ideas to leadership in business.

Motivation is a key component of job performance.

But what people say about their motives **cannot be taken at face value**...

...because motivations are largely **unconscious**.

Tests reveal that there are three key motivations that drive performance.

Achievement: the drive to excel and improve in all efforts.

Power: the drive to influence and manage other people.

Affiliation: the drive to form and maintain warm relationships with other people.

See also: Abraham Maslow 138–39 ▪ Mihály Csíkszentmihályi 198–99 ▪ Martin Seligman 200–01

In the 1960s and 70s, decisions about whether to employ someone or not were usually based on educational achievement, and the results of personality and IQ tests. David C. McClelland, however, suggested that peoples' motivations were the best predictor of success in the workplace. Through extensive research, he identified the three key motivations that he believed were responsible for job performance: the need for power, for achievement, and for affiliation. While everyone has all three motivations, he maintained that one would be dominant, shaping a person's performance in the workplace.

Three key needs

McClelland saw the need for power, or to have control over others, as the most important motivation for a good manager or leader. But this is only true as long as the need for power is on behalf of a company or an organization. Someone with a strong drive for personal power may make a poor team player.

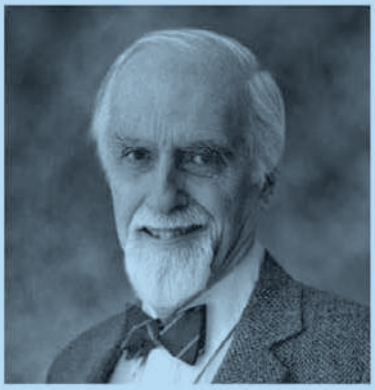
High quality work, McClelland thought, stems from the need for achievement, which is therefore a far more accurate predictor of job success than intelligence. The drive to achieve, he believed, is what gives people a competitive edge, helping them to stretch for new goals and improve.

Lastly, McClelland claimed that the need for affiliation—to have good relationships with others—helps people to work well within a team. He also noted that people with a pronounced need for affiliation are unlikely to be successful managers.

McClelland pointed out that motivation stems from personality traits that are deeply embedded in the unconscious. We are not fully aware of our own motivations, he stated, so what we may say about our motives in job interviews or self-report questionnaires should not be taken at face value. He advocated using the Thematic Apperception Test (TAT), which psychologists Henry Murray and Christiana Morgan devised in the 1930s as a way of revealing aspects of the unconscious. Rarely used in a business setting, the test presents a series of pictures to the subject, who is then asked to develop a story based on them. The assumption is that the stories will be a projection of the subject's underlying abilities and motivations. McClelland went on to devise an innovative way of analyzing TAT responses to allow a comparison between the suitability of the different people who took the test to specific work-related roles.

McClelland's ideas revolutionized business recruitment, and although his intensive methods of assessing job applicants have lost some of their popularity, the basic principles endure. Motivation is now seen as critical to performance at work. ■

The Thematic Apperception Test was promoted by McClelland as a way of assessing job candidates. Telling a story based on a series of images was thought to uncover people's true motives.



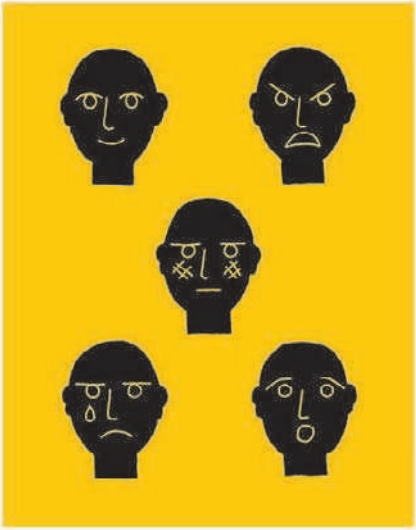
David C. McClelland

David Clarence McClelland was born in Mount Vernon, New York. After graduating from Wesleyan University, Connecticut, and gaining an MA at the University of Missouri, he moved to Yale, where he completed his PhD in experimental psychology in 1941. He taught briefly at several universities, before accepting a position at Harvard in 1956. McClelland stayed there for 30 years, becoming Chairman of the Department of Social Relations.

In 1963, McClelland set up a business management consultancy, applying his theories to assist company executives in the assessment and training of staff. In 1987, Boston University made him a Distinguished Research Professor of Psychology, a position he held up to his death at the age of 80.

Key works

1953 *The Achievement Motive*
1961 *The Achieving Society*
1973 *Testing for Competence Rather Than for Intelligence*
1987 *Human Motivation*
1998 *Identifying Competencies with Behavioral-Event Interviews*



EMOTION IS AN ESSENTIALLY UNCONSCIOUS PROCESS

NICO FRIJDA (1927–)

IN CONTEXT

APPROACH
Psychology of emotion

BEFORE
1872 Biologist Charles Darwin publishes the first scientific study of human emotions in *The Expression of the Emotions in Man and Animals*.

Late 1800s William James and Danish physiologist Carl Lange propose the James–Lange theory of emotion: that emotions are the result of bodily changes, and not the cause of them.

1929 Physiologists Walter Cannon and Philip Bard say we experience physiological arousal and emotion at the same time, in the Bard–Cannon theory.

AFTER
1991 In *Emotion and Adaptation*, psychologist Richard Lazarus says a thought must precede any emotion or physiological arousal.

Our emotions and feelings are idiosyncratic; they seem to be purely subjective, and the mysticism surrounding them may explain why the psychology of emotion has advanced so slowly. But during the last 30 years, this situation has changed, as scientific findings regarding the "site" of emotions have led to renewed interest. Evolutionary psychologists have also posed questions. What is the purpose of emotions? How have they helped us survive and thrive?

Emotion is an essentially unconscious process.

Emotions are motivating forces, preparing us for action.

They are **spontaneous biological processes** that are out of our control.

They can be **understood by others** through spontaneous physical expression, such as laughter.

Feelings are how we interpret the emotions we experience.

We are **consciously aware** of our feelings and can make **decisions** based on them.

As we have control of our feelings, **others cannot guess** at our feelings through our behavior.

See also: William James 38–45 ▪ Albert Ellis 142–45 ▪ Gordon H. Bower 194–95 ▪ Charlotte Bühler 336 ▪ René Diatkine 338 ▪ Stanley Schachter 338

Nico Frijda's groundbreaking book, *The Laws of Emotion*, explores the substance and rules of emotions. He sees them as lying at the crossroads of biological and cognitive processes: some, such as fear, are biologically inherent or innate, and these basic emotions are the ones we share with other animals. Others arise in us in response to thoughts, so are clearly cognition-based. They may even—as in the case of indignation or humiliation—be shaped by culture.

Frijda makes clear distinctions between emotions and feelings. Emotions are beyond our control; they spontaneously arise and alert us to their presence by physical sensations, such as a tightening in the gut when we feel fear. For this reason he says that "emotion is an essentially unconscious process." Feelings, on the other hand, are our interpretations of whatever emotions we are experiencing, and have a more conscious element to them. When we feel something, we are able to have thoughts and make decisions about it. We are not suddenly hijacked by our feelings as we are by our emotions.

Action and thought

Frijda points out that emotions and feelings are also displayed differently. Emotions prepare us for action; in situations that induce fear, they are motivating forces that prepare the body to flee or stand and fight. Other people are able to understand, or at least guess at, our emotions from our behavior. Feelings, however, may or may not be consistent with behavior, because we can choose to behave in a way that hides them.

Frijda sees the basic emotions as an opportunity for greater self-awareness. They accompany a biological arousal that makes us notice them and become more aware of our feelings. This allows us to factor them into choices we make, and with honest reflection, to deepen self-awareness. But Frijda confines basic emotions to anger, joy, shame, sadness, and fear. Others, such as jealousy and guilt, do not have the same biological imperative.

Emotions, such as fear, Frijda says, are always "about something." They are spontaneous responses to changing circumstances, and reveal much about our relationship with our environment.

In defining and describing a very specific set of laws by which emotions operate, Frijda shows that they emerge, wax, and wane in a predictable way. Reason interprets them like a barometer, to ensure our mental well-being. "Our emotional selves and reasonable selves are not compartmentalized," Frijda says, "on the contrary, they are connected much more than they seem". ■

Nico Frijda

Nico Henri Frijda was born in Amsterdam to an academic Jewish family, and lived in hiding as a child to avoid the persecution of the Jews during World War II. He studied psychology at Gemeente Universiteit, Amsterdam, where he was awarded a PhD in 1956 for his thesis *Understanding Facial Expressions*. He attributes his initial interest in emotions to being in love, as a student, with "a very expressive girl."

From 1952 to 1955 Frijda worked as a clinical psychologist at the Dutch Army Neurosis Centre, before returning to research and teaching. For the next 10 years he was assistant professor at the University of Amsterdam, then professor in experimental and theoretical psychology.

Frijda has held visiting posts in universities across Europe, including Paris, Italy, Germany, and Spain. He lives with his second wife in Amsterdam.

Key works

1986 *The Emotions*
2006 *The Laws of Emotion*
2011 *Emotion Regulation and Free Will*

BEHAVIOR WITHOUT ENVIRONMENTAL CUES WOULD BE ABSURDLY CHAOTIC

WALTER MISCHEL (1930–)

IN CONTEXT

APPROACH
Personality theory

BEFORE
c.400 BCE Ancient Greek physician Hippocrates suggests personality depends on the levels of the four humors in the body.

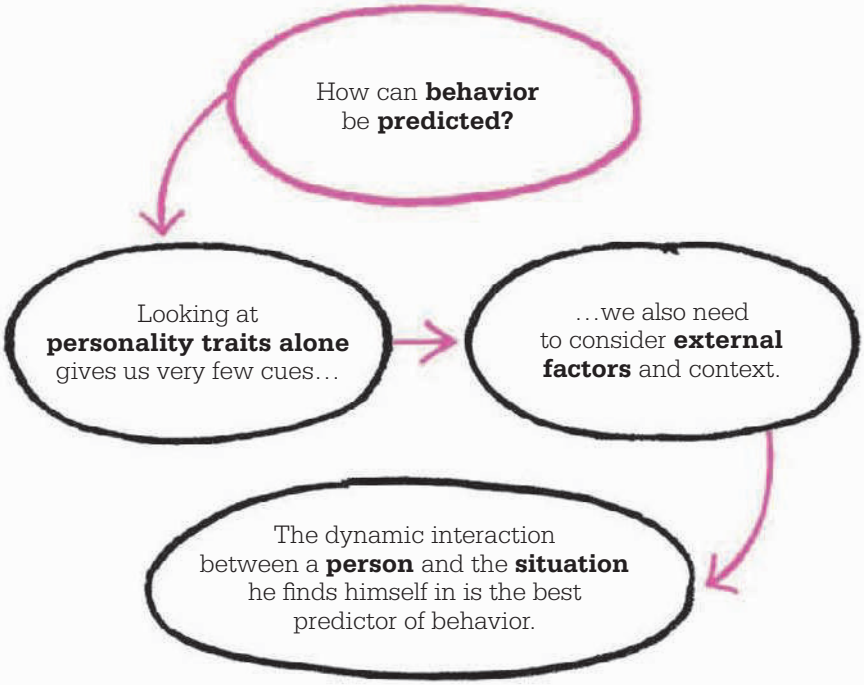
1946 Raymond Cattell begins developing his 16-factor model of personality.

1961 American psychologists Ernest Tupes and Raymond Christal propose the first "Big Five" personality-factor model.

AFTER
1975 Hans J. Eysenck's Personality Questionnaire identifies two biologically based, independent dimensions of personality.

1980 US psychologists Robert Hogan, Joyce Hogan, and Rodney Warrenfeltz develop comprehensive personality tests based on the "Big Five" model of personality.

Until the late 1960s, personality was most often described as a series of individual behavioral traits that were genetically inherited. Psychologists worked to define and measure these traits, because this was thought to be essential to understanding and reliably predicting a person's behavior. Raymond Cattell identified 16 different personality traits; Hans J. Eysenck suggested there were only three or four. In 1961, Ernest Tupes and Raymond Christal proposed that there are five major personality traits (the "Big Five"): openness, conscientiousness, extraversion, agreeableness, and neuroticism or emotional stability. Then, in 1968,



See also: Galen 18–19 ▪ Gordon Allport 306–07 ▪ Raymond Cattell 314–15 ▪ Hans J. Eysenck 316–21

Walter Mischel shocked the world of personality theory when he proclaimed in *Personality and Assessment* that the classic personality test was almost worthless. He had reviewed a number of studies that tried to predict behavior from personality test scores, and found them to be accurate only 9 percent of the time.

External factors

Mischel drew attention to the part played by external factors, such as context, in determining behavior, believing that it was necessary to look at the dynamic interaction of people and the situation they find themselves in. Imagine how absurd it would be if people's behavior appeared to be independent of external factors. He proposed that an analysis of a person's behavior, in different situations, observed on numerous occasions, would provide clues to behavior patterns that would reveal a distinctive signature of personality, as opposed to a list of traits. Individual interpretation of a situation was also considered.

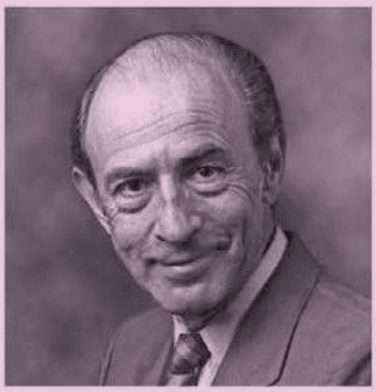
Later, Mischel explored habits of thinking, which might endure over time and across different situations.

> What is a personality test really telling us about a person?
> **Walter Mischel**

Resisting temptation, rather than succumbing to short-term gratification, often indicates a capacity for greater achievement in life, as Mischel's studies of behavior in young children revealed.

In his famous marshmallow experiments, aimed at testing willpower, four-year-old children were presented with a single marshmallow and told they could either eat it immediately, or wait 20 minutes and then have two. Some children were able to wait, others were not. Mischel monitored each child's progress into adolescence, and reported that those who had resisted temptation were better adjusted psychologically and more dependable; they did better at school, were more socially competent, and had greater self-esteem. Ability to delay gratification seemed to be a better predictor of future success than any previously measured trait.

Mischel's work led to a shift in the study of personality—from how personality predicts behavior to how behavior reveals personality. It also changed the way personality profiling is used in assessing job candidates. Tests that were once considered an accurate basis for staff recruitment are now seen as a guide, to be interpreted in the context of the situations that are likely to arise in doing a job. ■



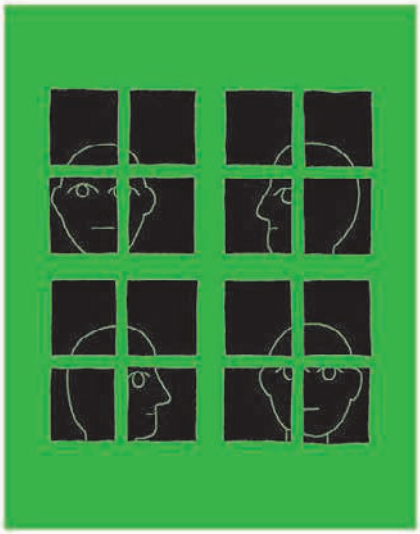
Walter Mischel

Walter Mischel was born in Austria, but emigrated with his family to the US in 1938. He grew up in Brooklyn, New York, receiving his PhD in clinical psychology from Ohio State University in 1956. He then went on to teach at the Universities of Colorado, Harvard, and Stanford, moving in 1983 to Columbia University in New York City, where he is the Robert Johnston Niven Professor of Humane Letters.

Numerous honors have been heaped on Mischel. These include the Distinguished Scientific Contribution Award as well as the Distinguished Scientist Award of the American Psychological Association, and the prestigious Grawemeyer Award in psychology in 2011. Mischel is also a prolific and talented artist.

Key works

1968 *Personality and Assessment*
1973 *Is Information About Individuals More Important Than Information About Situations?*
2003 *Introduction to Personality*



WE CANNOT DISTINGUISH THE SANE FROM THE INSANE IN PSYCHIATRIC HOSPITALS

DAVID ROSENHAN (1932–)

IN CONTEXT

APPROACH
Anti-psychiatry

BEFORE
1960 In *The Divided Self: An Existential Study in Sanity and Madness*, R.D. Laing emphasizes the family as a source of mental illness.

1961 Psychologists E. Zigler and L. Phillips demonstrate huge overlaps in the symptoms of different categories of psychiatric disorder.

1961 Hungarian-American psychiatrist Thomas Szasz publishes the controversial *The Myth of Mental Illness*.

1967 British psychiatrist David Cooper defines the anti-psychiatry movement in *Psychiatry and Anti-Psychiatry*.

AFTER
2008 Thomas Szasz publishes *Psychiatry: The Science of Lies*.

Psychiatrists say that mental disorders **can be accurately diagnosed through symptoms** that can be categorized into diseases.

So they should be able to **tell the difference** between the sane and the insane.

A first experiment showed that sane people can be judged insane.

A second experiment showed that people with genuine mental health disorders can be judged to be faking them.

We cannot distinguish the sane from the insane in psychiatric hospitals.

Psychiatric diagnoses are not objective, but exist only in the minds of the observers.

See also: Emil Kraepelin 31 ▪ R.D. Laing 150–51 ▪ Leon Festinger 166–67 ▪ Solomon Asch 224–27 ▪ Erving Goffman 228–29 ▪ Elliot Aronson 244–45 ▪ Thigpen & Cleckley 330–31

During the 1960s, psychiatry faced a vocal challenge to its fundamental beliefs by a number of experts known as the "anti-psychiatrists." This informal group of psychiatrists, psychologists, and welfare workers claimed that psychiatry is a medical model of mental health, yet there are no physical symptoms, and its treatment regimes largely ignore the patient's needs and behaviors.

In 1973, David Rosenhan carried out a field study in the US that explored the validity of psychiatric diagnosis and resulted in the dramatic conclusion that we cannot distinguish the sane from the insane in psychiatric hospitals.

In the first part of the study, Rosenhan assembled a group of eight sane people (including himself), made up of women and men of different occupations and ages, and designated them as pseudo-patients. They were briefed to make an attempt to be admitted as patients to different mental hospitals in five US states, first by telephoning the hospital to ask for an appointment. Later, at the admissions office, they were to complain of hearing an unfamiliar voice in their heads, which was unclear but used words such as "empty" and "thud." This suggested existential feelings of pointlessness. They were instructed to give false names and occupations, but otherwise true personal histories.

As a result, all the pseudo-patients were admitted to hospital with a diagnosis of schizophrenia, despite showing no symptoms of the disorder. Their hospital stays lasted an average of 19 days, during which time they behaved completely normally. They maintained journals of their experiences, surreptitiously at first but then openly, as it was never questioned. Demonstrating how even normal behavior might be interpreted as evidence of a psychiatric condition, Rosenhan found that a common comment in their medical notes was "patient engages in writing behavior."

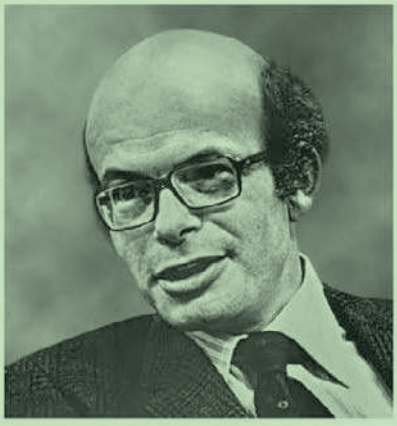
The "patients" themselves described their experience in hospital as one of depersonalization and powerlessness. Their records showed that the average daily time they spent with medical staff was less than seven minutes. Although they were undetected by the hospital staff, other patients challenged their sanity, sometimes quite vigorously: "You're not crazy. You're a journalist checking up on the hospital."

Judging the insane sane

In the second part of Rosenhan's study, he falsely informed the staff at a teaching and research hospital (who were aware of the first study) that during the next three months, one or more pseudo-patients would try to be admitted to the hospital, and they were asked to rate each new patient on the likelihood of them being a pseudo-patient. Of 193 genuine new admissions, 41 were judged suspect by at least one member of staff, and 23 were flagged as possible pseudo-patients by at least one psychiatrist.

Rosenhan's work generated an explosion of controversy, and led many institutions to take steps to improve their care of patients. ■

David Rosenhan



David Rosenhan was born in the US in 1932. After gaining a BA in psychology from Yeshiva College, New York City, he moved to the city's Columbia University to study for his MA and PhD. He specialized in clinical and social psychology, and became an expert in legal trial tactics and decision-making. From 1957 to 1970, he taught at Swarthmore College, Princeton University, and Haverford College, then moved to Stanford, where he taught for nearly 30 years. He continues to work at Stanford as professor emeritus of psychology and law. He is a fellow of the American Association for the Advancement of Science and was a visiting fellow at Oxford University. He founded the Trial Analysis Group and has long been a major advocate for the legal rights of mental health patients.

Key works

1968 *Foundations of Abnormal Psychology* (with Perry London)
1973 *On Being Sane in Insane Places*
1997 *Abnormality* (with Martin Seligman and Lisa Butler)

THE THREE FACES OF EVE

CORBETT H. THIGPEN (1919–1999)
HERVEY M. CLECKLEY (1903–1984)

IN CONTEXT

APPROACH
Mental disorders

BEFORE
1880s Pierre Janet describes MPD as multiple states of consciousness and coins the term "dissociation."

1887 French surgeon Eugene Azam documents the multiple personalities of Felida X.

1906 US physician Mortin Prince reports Christine Beauchamp's case in *The Dissociation of Personality*.

AFTER
1970s US psychiatrist Cornelia Wilbur reports Sybil Isabel Dorsett's case and links MPD definitively with child abuse.

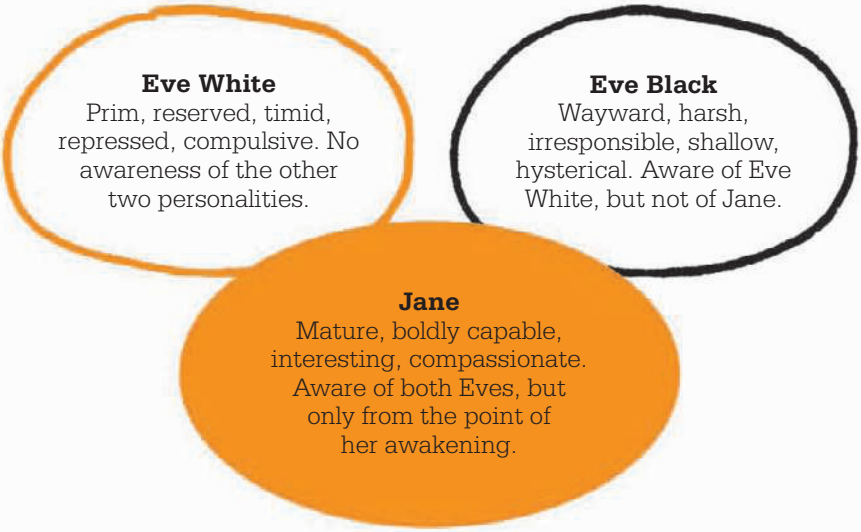
1980 The American Psychiatric Association publishes the third edition of the *Diagnostic and Statistical Manual of Mental Disorder,* legitimating MPD.

1994 MPD is renamed Dissociative Identity Disorder.

Multiple personality disorder (MPD, later known as dissociative identity disorder) is a mental condition in which an individual's personality appears to present as two or more distinct identities. MPD was first reported in 1791 by Eberhardt Gmelin; over the following 150 years, a further 100 clinical cases were documented. It was believed that the condition arose from childhood abuse, and could be cured by integrating the sub-personalities back into the main personality.

One of the most famous cases of multiple personality disorder is that of Eve White. Eve was referred to Thigpen and Cleckley in 1952, suffering from severe headaches and occasional blackouts. She was a neat, rather prim, young woman, aged 25, married, with a four-year-old daughter. Eve would remain in treatment for 14 months.

Eve described to the doctors a disturbing episode: she had bought some extravagant clothes she could not afford, yet had no memory of the purchase. As she recounted this, her



See also: Pierre Janet 54–55 ▪ Timothy Leary 148 ▪ Milton Erickson 336

demeanor began to change. She looked confused, then the lines of her face altered. Her eyes widened, and she smiled provocatively. She spoke in a bright, flirtatious tone, requesting a cigarette, even though Eve did not smoke.

This was "Eve Black," a separate personality so distinct that she even suffered from a skin allergy to nylon that Eve White did not. Eve White was unaware of Eve Black, while the latter was wholly aware of the former, and was full of derision for her: "She's such a damn dope…."

Distinct personalities

Both personalities were submitted to extensive psychological testing. Eve White had a marginally higher IQ than Eve Black; both fell in the "bright, normal" category. Personality dynamics were explored using the Rorschach test (in which subjects report their perception of inkblots). There were dramatic differences: Eve Black showed a dominant hysterical tendency, and the ability to conform. Eve White showed "constriction, anxiety, and obsessive compulsive traits" and an inability to deal with her hostility.

> 'When I go out and get drunk,' Eve Black said, '*she* wakes up with the hangover.'
> **Thigpen & Cleckley**

Eve's story was popularized in a book and a film, *The Three Faces of Eve*, which captured the public's imagination and made Eve's case the most famous example of Multiple Personality Disorder.

Eve's condition was believed to result from childhood abuse, so efforts were made to work back into her early childhood, using hypnosis to provoke the emergence of Eve Black. Eventually, an attempt was made to summon both personalities at once; Eve fell into a trance. She woke as a third personality: this was Jane, the third face of Eve—a more capable and interesting character than Eve White. She seemed to combine the assets of both Eves, without their weaknesses. While neither Eve was aware of Jane, she was aware of them both.

Jane appeared to be a balanced compromise between the two Eves, and she was nurtured as the personality with the best grasp of the complex dynamics of the three personalities: the two Eves were integrated into her character.

Full-blown cases of MPD such as Eve's are rare, but it is now thought that less pronounced cases are more common. The careful documentation of in-depth case studies like Eve's has resulted in diagnostic and treatment protocols that make MPD highly treatable. ■

Corbett H. Thigpen & Hervey M. Cleckley

Corbett H. Thigpen was born in Macon, Georgia. His childhood interest in amateur magic endured throughout his life, and he was inducted into the Southeastern Association of Magicians' Hall of Fame. Thigpen graduated from Mercer University in 1942, and from the Medical College of Georgia in 1945. He served in the US Army during World War II, then in 1948 he began his distinguished career as a psychiatrist in a private practice with Hervey M. Cleckley. For two decades, the pair taught in the departments of psychiatry and neurology at the Medical College of Georgia. Thigpen was known as "the professor who received a standing ovation after every lecture." He retired in 1987.

Hervey M. Cleckley was born in Augusta, Georgia. In 1924, he graduated from the University of Georgia, where he was also a keen sportsman. He won a Rhodes scholarship to Oxford University, graduating in 1926. He spent his entire career at Georgia Medical School, in a variety of positions, including that of founding chairman of the Department of Psychiatry and Health Behavior. In 1941, he wrote *The Mask of Sanity*, a seminal study of psychopaths.

Key works

1941 *The Mask of Sanity* (Cleckley)
1957 *The Three Faces of Eve* (Thigpen & Cleckley)